AUTOMOBILE ENGINEERING

A HOME-STUDY COURSE AND GENERAL REFERENCE WORK

on the Construction, Care, and Repair of Cars and Trucks; on Ignition and Starting Systems; also Instructions on Diesel Engines; Service Station Operation

Prepared by a Staff
of Automobile Experts
Under the Supervision of
RAY F. KUNS
Principal, Central Vocational High School, Cincinnati Public Schools, Member of Society of Automotive Engineers, American Vocational Association and National Education Association

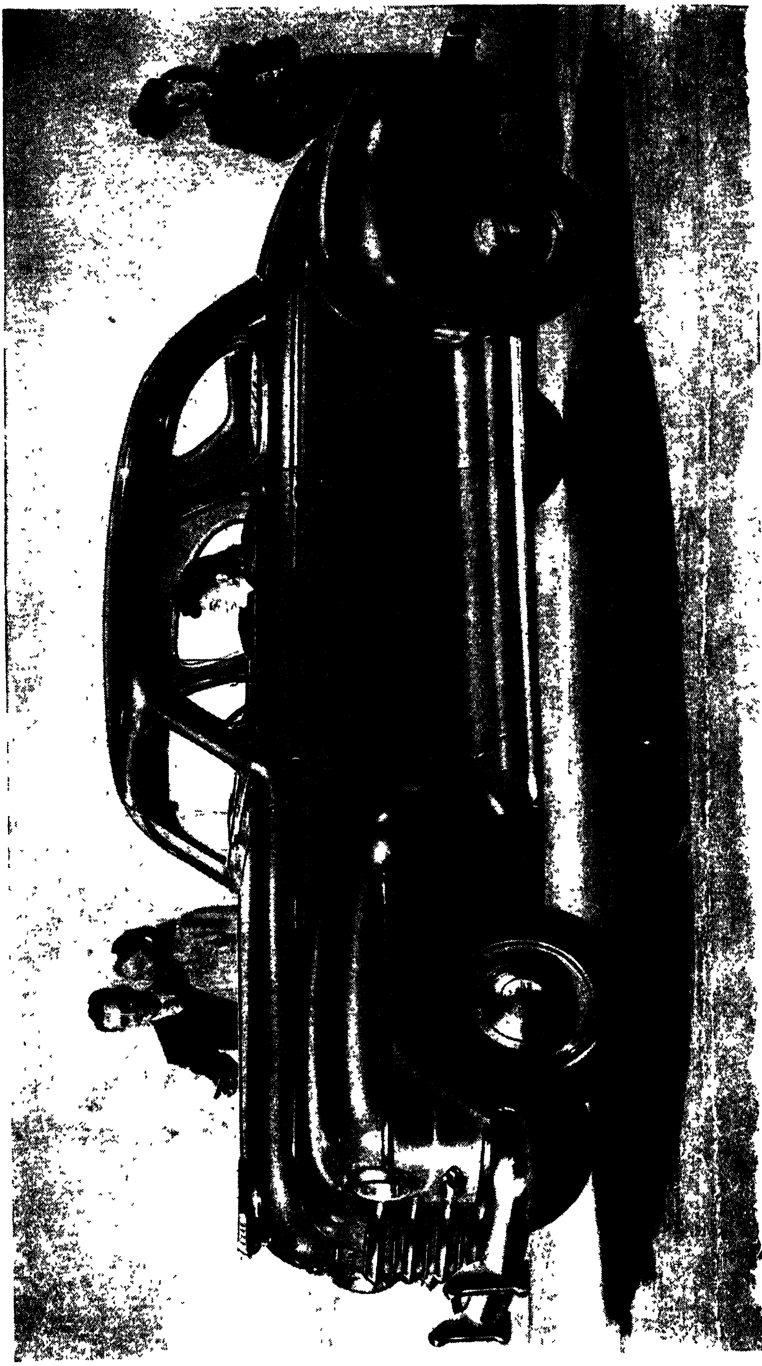
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FOREWORD

ALTHOUGH recorded history is not wholly agreed as to the first man in America to perfect and operate an automobile, this honor is generally accorded to Charles E. Duryea of Springfield, Massachusetts, who on September 12, 1892, operated a Duryea gasoline automobile in that city. By the year 1900, a number of "gasoline buggies" were in process of manufacture and by 1910 automobile building in the United States had begun to assume the proportions of an established industry. Quantity production methods have resulted in the building of over fifty-five million passenger cars and almost four million trucks.

As a result of the highly developed skill of automobile production, the call for old-fashioned *repair service* is gradually being displaced by the call for a new type of man trained in *maintenance service.*

Perhaps the first line of defense against the needs of the modern motor car is the list of three hundred and twenty-five thousand gasoline service stations offering maintenance service in varying degrees. Next in number come sixty-five thousand general repair garages and some thirty-five thousand car dealers. The personnel required to man all these services must have specialized training.

Modern devices have been developed to enable garage men to diagnose motor car troubles. Scientific equipment assures accuracy and precision in this work, and up-to-date stations demand men who can handle this equipment.

There is no need to guess the type of lubricant required by any part of the automobile, nor is there any need to estimate or guess as to the amount of clearance to be allowed in the adjustment of the intricate automotive assemblage. Accurate and exact information is provided by lubrication charts, wiring diagrams, and data sheets.

Service men have taken it upon themselves to attempt to make the automobile foolproof and to make it a safer vehicle on the highways. This has resulted in safety campaigns in the servicing of brakes, headlights, and the third vital item, front axle and steering geometry.

Although the principle of the Diesel or oil engine is practically as old as that of the gasoline engine, which has been developed on the Otto cycle principle, it was not until comparatively recent years that the Diesel has begun to find a very large place in the transportation field. Diesel engines have been speeded up, and lightweight Diesels are being rotated approximately as fast as heavier

gasoline engines. The Diesel engines are finding their place in road tractors, road machinery, farm tractors, buses, and trucks. The auto-mechanic who has a well-grounded understanding of the principles and practices common in the automotive field has little difficulty in transplanting himself in the Diesel engine service field. Many anticipate that the further development of the Diesel will insure its place in the passenger car field.

In the automobile racing field there have been outstanding developments in recent years, chief of which is the propulsion of a motor vehicle over the salt beds of Utah at a speed in excess of three hundred miles per hour. Each year has seen the breaking of speedway records with higher and more efficient performances. There has been a tendency for road racing to come back into public favor, and some car manufacturers regard this with anticipation in the hope of boosting the performance of their particular automobile.

Considerable interest has been shown over the possibilities of a rear-engined power plant. More complete streamlining of car bodies is always under consideration by engineers. Fuel economy also continues to play an important part in engineering practice. In the design of trucks and tractor-trailers for highway freight transportation, the tendency is toward the use of the pancake-type engine with the cab over it at the front of the vehicle. Outstanding examples of free design in engine placement are in placing engines behind the rear axle in buses and the use of the twin drive.

A great deal of the short-haul business, which was handled at one time by the railroads, is now carried by trucks and tractor-trailers. The use of lightweight, high-speed, high-compression engines, similar to those utilized in the passenger car field, has become a general practice in highway freight service. This serves to prove the contention of automobile engineers that the automobile has a great deal more power than is really required for ordinary passenger car use. This fact has fostered the development of the house-type and display-type trailer coach drawn by passenger cars.

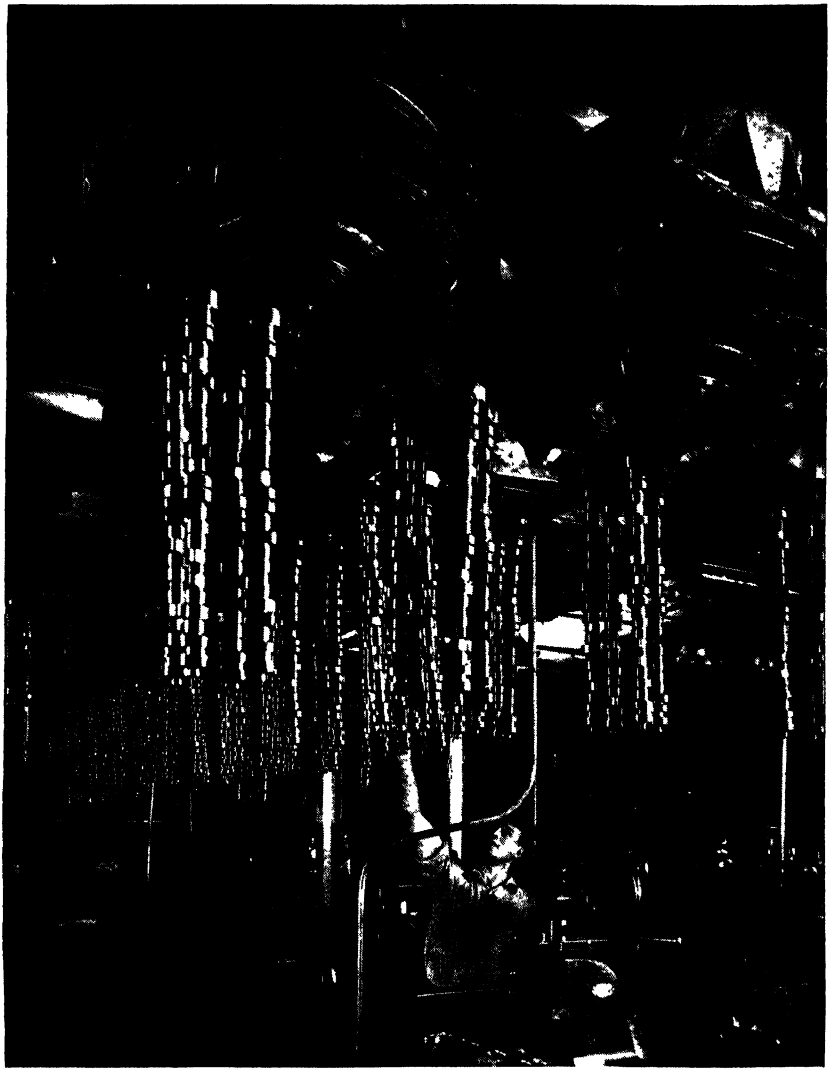
In the last thirty years, thanks to the automobile industry, a fundamental and far-reaching change in American life has taken place without exciting the notice and comment which has been given many less important changes. For the first time in history a country has had a transportation system large enough to transport its entire population at one time. Along with this great development there has appeared in even more recent years the expansion of the aviation industry on a scale comparable to that attained by the railroads and steamship lines. Young engineers interested in a life of service in the aviation industry must recognize that training demanded for

success in this field is of an exceedingly high order. For every ship in the air, there is a crew of from five to ten men on the ground. It is in this field that many automotive engineers have been and are finding an outlet for their skills.

Intimately tied up with all the various phases of automotive progress in the field of transportation is the question of manpower. The automotive industry today continues to afford to young men everywhere one of the most popular and profitable fields of training and service. It calls for men who are willing and anxious to train themselves in the highly technical lines of service. The young engineer, however, must realize that in any phase of this great American industry there comes the basic need for scientific and exact application of knowledge and skill. These volumes have been prepared with this fundamental need in mind.

Table of Contents

Volume VI



AUTOMOBILE ENGINE CAMSHAFTS AT THE FORD RIVER ROUGE PLANT

Courtesy of Ford Motor Company

Index Wiring Diagrams and Data Sheets for 1933-37 Cars

For 1938 cars, see pages 251–306
For 1939 cars, see pages 307–369
For 1940 cars, see pages 371–432
For 1941 cars, see pages 433–485
For 1942 cars, see pages 487–529
For 1943 cars, see pages 531–535
For 1946 cars, see pages 536–548

WIRING DIAGRAMS AND DATA SHEETS

CHART OF ABBREVIATIONS

GENERAL

Amps.—Amperes
V.—Volts
C.P.—Candle Power
R.& L. of Firing Order—Right and left determined from driver's seat
Max. Chg. Rate—Maximum Charging Rate
R.P.M.—Revolutions per Minute
M.P.H.—Miles per Hour
D.C.—Double Contact
MM.—Millimeters
Side Lights—Side or Parking Lights
Air Gap—Contacts Closed
Oil—Oil Ring
Comp.—Compression Ring

IGNITION AND VALVE TIMING

B.T.D.C. or B.T.C.—Before Top Dead Center
B.B.D.C. or B.B.C.—Before Bottom Dead Center
A.B.D.C. or A.B.C.—After Bottom Dead Center
A.T.D.C. or A.T.C.—After Top Dead Center
T.D.C. at Retard—Top Dead Center; Spark Control Retarded
12° past T.D.C.—Piston 12° past T.D.C. Spark Control Retarded
2½" before T.D.C.—Piston 2½", on Flywheel, before T.D.C.
"Ret" at Retard—Marks "Ret" on Flywheel

LUBRICATION SYSTEM

Gals.—Gallons
Qts.—Quarts
Press.—Pressure to Main Bearings
Splash—Pressure Circulating Splash
Splash—Connecting Rod Dips

REAR AXLE

Semi—Semi-Floating
¾ Flt.—Three-quarters Floating
Full Flt.—Full Floating

CLUTCH

Disc.—Multiple disc, either wet or dry
Plate—Single or Double Plate Type

BRAKES

Front—Front Wheels
Rear—Rear Wheels
Hand—Hand Brake
Trans.—Transmission Brake

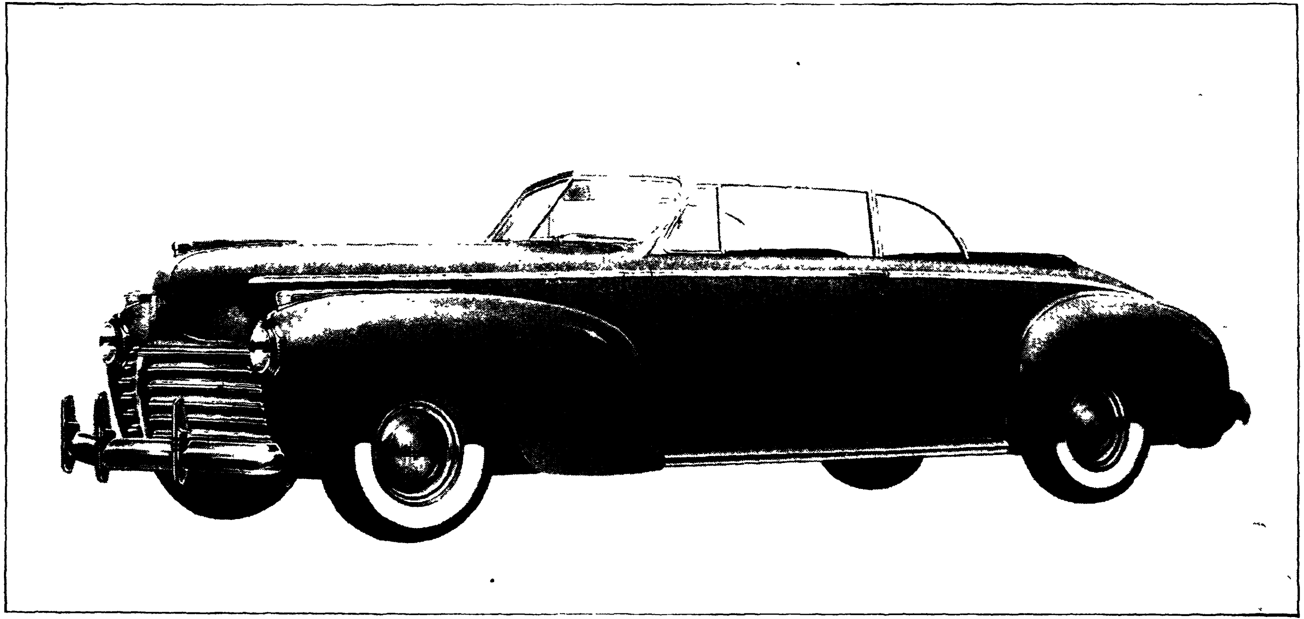
INDEX

1933-37 Wiring Diagrams and Data Sheets

WIRING DIAGRAMS AND DATA SHEETS

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WIRING DIAGRAMS AND DATA SHEETS



1941 CHRYSLER NEW YORKER CONVERTIBLE COUPE
Courtesy of the Chrysler Corporation

Auburn — Model 6-54, 6-Cylinder — Year 1936

Battery U.S.L. **Type** **Volts** 6 **Amps.** 90

Frame Connection Positive

Lighting **Head Lights**

Stop Light **Tail**

Parking Lights

Starter and Generator Auto-Lite

Generator Auto-Lite — **Max. Chg. Rate** 16.3 Amps. **Speed** 2050 R.P.M.

Regulation **Cut-in** 7 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite — **Contact Breaker Gap** .018″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 3° B.T.C. Retard

Engine **Bore** 3$\frac{1}{16}$″ **Stroke** 4$\frac{3}{4}$″ **Taxable H.P.** 22.51

Piston Ring—Width Oil 1—$\frac{1}{8}$″, 1—$\frac{3}{16}$″ Comp. $\frac{1}{8}$″

Diam. 3$\frac{1}{16}$″ **Gap** .013″

Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 7.5° B.T.C. **Close** 37.5° A.B.C.

Intake Clearance .010″ Hot

Exhaust Timing—Open 50° B.T.C. **Close** 5° A.T.C.

Exhaust Clearance .010″ Hot

Carburetor Stromberg EX22

Steering Caster 3$\frac{1}{2}$° Camber 2$\frac{1}{2}$° Toe-in $\frac{1}{8}$″

Cooling System Pump **Type** Centrifugal **Capacity** 16 Qts.

Clutch Long **Facings** Moulded 5$\frac{3}{4}$″ x 9″ x .137″ 2 Required

Gear Ratio 4.4 to 1 Spiral Gears

Axle Columbia Semi-Floating

Brakes Bendix Hydraulic

- **Front** 24$\frac{9}{32}$″ x 1$\frac{1}{2}$″ x $\frac{3}{16}$″ Clearance .010″
- **Rear** 24$\frac{9}{32}$″ x 1$\frac{1}{2}$″ x $\frac{3}{16}$″ Clearance .010″
- **Hand** Rear Service

Lining Moulded

Auburn — Model 8-52, 8-Cylinder — Year 1936

Battery U.S.L. **Type** **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting **Head Lights**
Stop Light **Tail**
Parking Lights

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 16.3 Amps. **Speed** 2050 R.P.M.
Regulation **Cut-in**
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .018"
Spark Plug—Size 14 M.M. **Gap** .025"
Firing Order 1-6-2-5-8-3-7-4
Timing 3° B.T.C. Retard

Engine **Bore** 3 1/16" **Stroke** 4 3/4" **Taxable H.P.** 30.00
Piston Ring—Width Oil 1—1/8", 1—3/16" Comp. 1/8"
Diam. 3 1/16" **Gap** .013"
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 7.5° B.T.C. **Close** 37.5° A.B.C.
Intake Clearance .010" Hot
Exhaust Timing—Open 50° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .010" Hot

Carburetor Stromberg EE1

Steering Caster 2° Camber 1 1/2° Toe-in 1/8"

Cooling System Pump **Type** Centrifugal **Capacity** 20 Qts.

Clutch Long **Facings** Moulded 5 1/2" x 9 3/4" x .137" 2 Required

Gear Ratio 4.08 to 1 Spiral Gears

Axle Columbia Semi-Floating

Brakes Bendix Hydraulic
Front 24 9/32" x 2" x 3/16" Clearance .010"
Rear 24 9/32" x 2" x 3/16" Clearance .010"
Hand Rear Wheels

Lining Moulded

Auburn Models 6-52-X and Y Year 1934

Battery U.S.L. **Type** RN-15A **Volts** 6 **Amps.** 90
Frame Connection Positive

Lighting
Head Lights 6-8, 32-21 C.P.
Dash, Tail and Stop 6-8, 21-2LH-3RH C.P.
Side Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 20 Amps. **Speed** 2300 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .018″-.020″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 3° B.T.C.

Engine **Bore** 3 1/16″ **Stroke** 4 3/4″ **Taxable H.P.** 22.51
Piston Ring—Width Oil 2—1/8″ Comp. 2—1/8″ **Diam.** 3 1/16″
Gap Oil .006″-.012″ Comp. .010″-.018″
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 40° A.B.C.
Intake Clearance .006″-.008″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .006″-.008″ Hot

Carburetor Carter 288-S

Cooling System Centrifugal **Type** Pump

Clutch Long **Facings** Moulded 5 3/4″ x 9″ x .137″ 2 Required

Gear Ratio Spiral Gears

Axle Columbia Semi-Floating

Brakes Bendix Hydraulic
- **Front** 1 1/2″ x 3/16″ Clearance .010″
- **Rear** 1 1/2″ x 3/16″ Clearance .010″
- **Hand** Rear Service

Lining Moulded

Auburn **Model 8-101** **Year 1933**

Battery U.S.L. **Type** XY-15X-6A **Volts** 6 **Amps.** 104
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 32-32 C.P.
Double Contact **Stop Light** 6-8, 21 **Tail** 3 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 9-12 Amps. **Speed** 1800-2000 R.P.M.
Regulation 3rd Brush, Thermo. **Cut-in** 600 R.P.M.
Relay Air Gap .012″-.017″ **Contact Gap.** 015″-.025″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 7/8 S.A.E. **Gap** .020″-.025″
Firing Order—1-6-2-5-8-3-7-4
Timing Std. Comp. 12-1/2° B.T.D.C. Piston .0702″ Adv.

Engine **Bore** 3″ **Stroke** 4-3/4″ **Taxable H.P.** 28.80
Piston Ring—Width 3-1/8″, 1-3/16″ **Diam.** 3″ **Gap.** .006″
Oiling—Type Pressure **Capacity** 8 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 40° A.B.C.
Intake Clearance .010″ Cold
Exhaust Timing—Open 50° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg Model URO—Updraft

Cooling System—Centrifugal **Type** Pump **Capacity** 4-3/4 Gals.

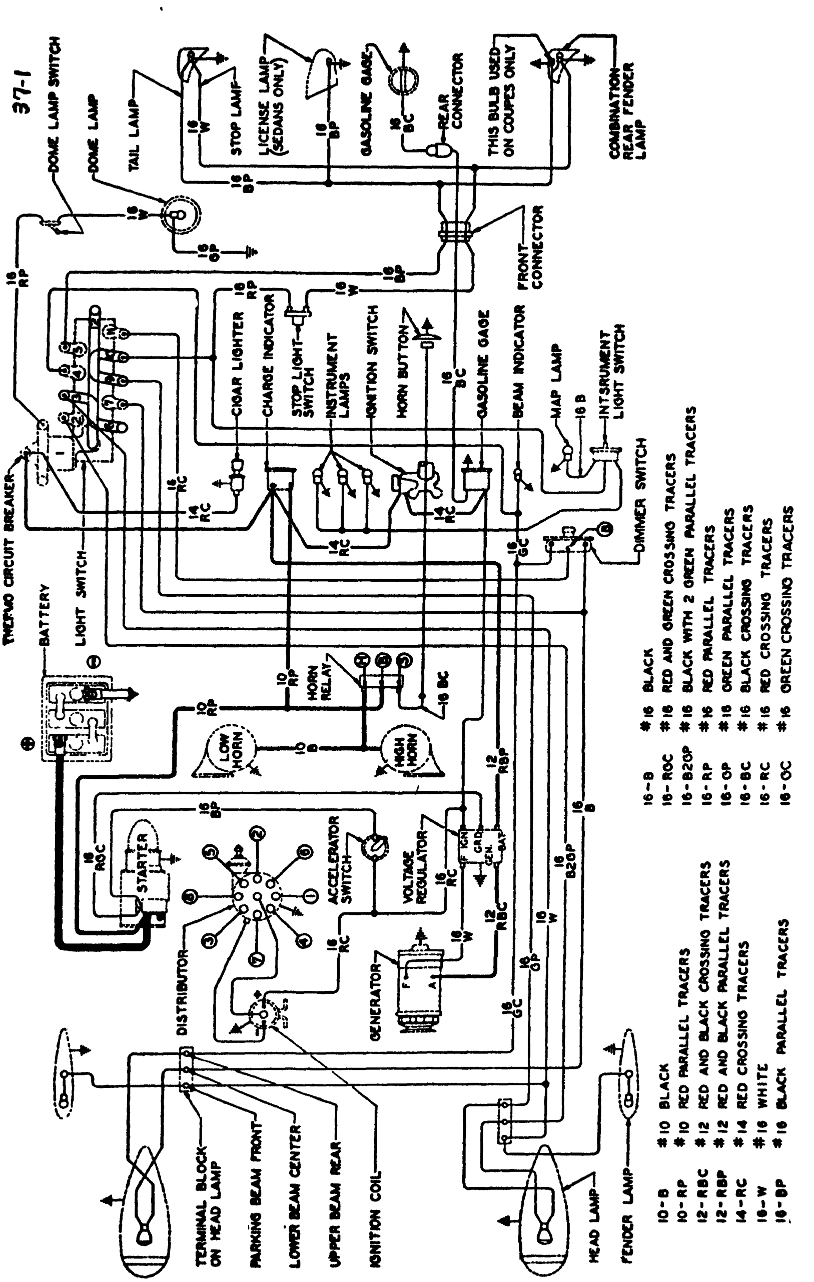
Clutch Long **Facing**—Moulded 9-3/4″ x 5-1/2″ x .137″

Gear Ratio Ring Gear 47 Pinion 10 Spiral Gears

Axle Columbia Semi-Floating

Brakes Midland Mechanical
- **Front** 33-3/4″ x 1-3/4″ x 7/32″ Clearance .040″
- **Rear** 33-3/4″ x 1-3/4″ x 7/32″ Clearance .040″
- **Hand** All 4 Wheels

Lining—Moulded



BUICK WIRING DIAGRAM, 1937, MODEL 40

Courtesy of Buick Motor Company

Buick **Model 40** **Year 1937**

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 100

Frame Connection Negative

Lighting Mazda 2320-L **Head Lights** 6-8, 32-21 C.P.

Mazda 1154 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

Mazda 55 **Parking Lights** 6-8, 1.5 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 28 Amps. Hot **Speed** 4200 R.P.M., Arm.

Regulation Voltage **Cut-in** 6.5 Volts, 800 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .013″

Spark Plug—Size 18 M.M. **Gap** .022″

Firing Order 1-6-2-5-8-3-7-4

Timing 2° B.T.C. Spark Half Advance

Engine **Bore** 3$\frac{3}{32}$″ **Stroke** 4$\frac{1}{8}$″ **Taxable H.P.** 30.63

Piston Ring—Width Oil 2—$\frac{3}{16}$″ Comp. 2—$\frac{3}{16}$″
Diam. 3$\frac{3}{32}$″ **Gap** Oil .010″ Comp. .010″

Oiling—Type Gear Pump **Capacity** 6 Qts.
Pressure 45 Lbs. @ 35 M.P.H.

Valves **Intake Timing—Open** 13° B.T.C. **Close** 68° A.B.C.

Intake Clearance Hot .015″ Operating, .004″ Timing

Exhaust Timing—Open 55° B.B.C. **Close** 22° A.T.C.

Exhaust Clearance Hot .015″ Operating, .004″ Timing

Carburetor Stromberg AA1

Steering Caster $-\frac{1}{8}$° Camber $-\frac{1}{4}$° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13$\frac{1}{4}$ Qts.

Clutch Long **Facings** Woven 6″ x 10″ x $\frac{1}{8}$″ 2 Required

Gear Ratio Ring Gear 44 Pinion 10 Hypoid Gears

Axle Own Semi-Floating

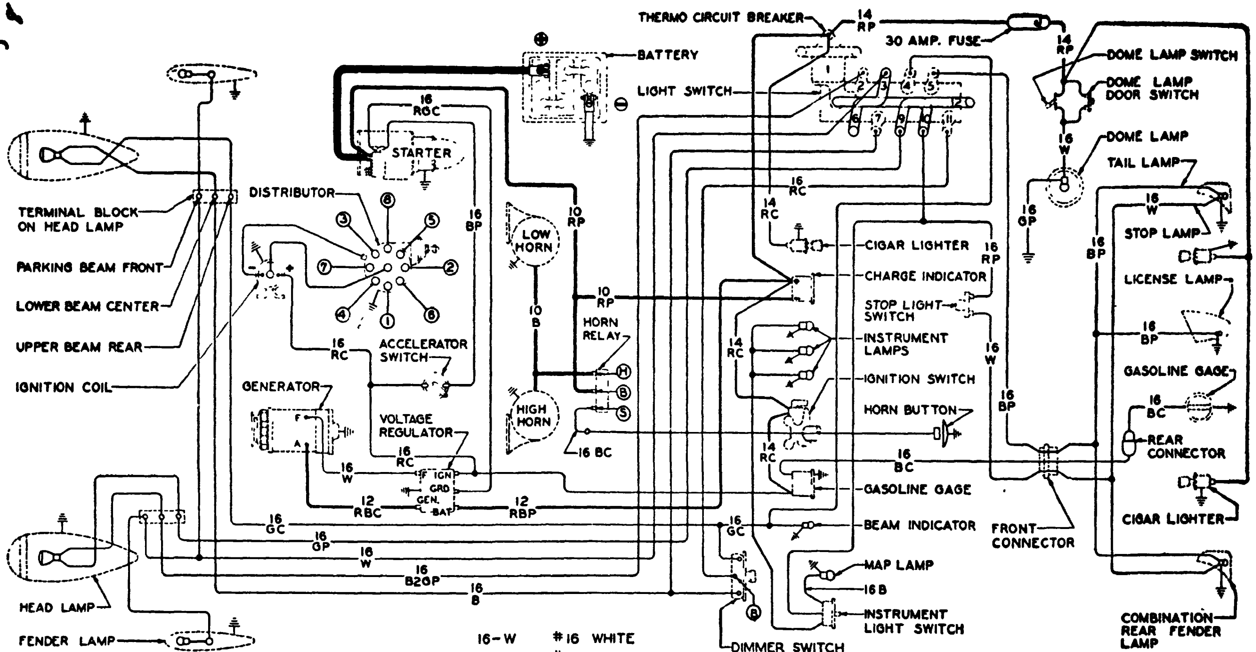
Brakes Bendix Hydraulic

Front 22$\frac{11}{16}$″ x 1$\frac{3}{4}$″ x $\frac{3}{16}$″ Clearance .010″

Rear 22$\frac{11}{16}$″ x 1$\frac{3}{4}$″ x $\frac{3}{16}$″ Clearance .010″

Hand Rear Service

Lining Woven Diagram 37-1



10-B	#10	BLACK
10-RP	#10	RED PARALLEL TRACERS
12-RBC	#12	RED AND BLACK CROSSING TRACERS
12-RBP	#12	RED AND BLACK PARALLEL TRACERS
14-RC	#14	RED CROSSING TRACERS
14-RP	#14	RED PARALLEL TRACERS
16-BP	#16	BLACK PARALLEL TRACERS
16-W	#16	WHITE
16-B	#16	BLACK
16-RGC	#16	RED AND GREEN CROSSING TRACERS
16-B2GP	#16	BLACK WITH 2 GREEN PARALLEL TRACERS
16-RP	#16	RED PARALLEL TRACERS
16-GP	#16	GREEN PARALLEL TRACERS
16-BC	#16	BLACK CROSSING TRACERS
16-RC	#16	RED CROSSING TRACERS
16-GC	#16	GREEN CROSSING TRACERS

BUICK WIRING DIAGRAM, 1937, MODELS 60, 80, 90

Courtesy of Buick Motor Company

Buick **Model 60** **Year 1937**

Battery Delco-Remy **Type** **Volts 6-8** **Amps. 120**
Frame Connection Negative

Lighting Mazda 2320L **Head Lights** 6-8, 32-21 C.P.
Mazda 1154 **Stop Light** 6-8, 21 C.P. **Tail 6-8, 3 C.P.**
Mazda 55 **Parking Lights** 6-8, 1.5 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 28 Amps. Hot **Speed** 4200 R.P.M., Arm.
Regulation Voltage **Cut-in** 6.5 Volts, 800 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .013″
Spark Plug—Size 18 M.M. **Gap** .022″
Firing Order 1-6-2-5-8-3-7-4
Timing 10° B.T.C. Spark Half Advance

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81
Piston Ring—Width Oil 2—3/16″ Comp. 2—3/16″
Diam. 3 7/16″ **Gap** Oil .010″ Comp. .010″
Oiling—Type Gear Pump **Capacity** 8 Qts.
Pressure 45 Lbs. @ 35 M.P.H.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance Hot .015″ Operating, .004″ Timing
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance Hot .015″ Operating, .004″ Timing

Carburetor Stromberg AA2

Steering Caster −1/8° Camber −1/4° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Clutch Long **Facings** Woven 6½″ x 11″ x .137″ 2 Required

Gear Ratio Ring Gear 39 Pinion 10 Hypoid Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 22 11/16″ x 2″ x 3/16″ Clearance .010″
Rear 22 11/16″ x 2″ x 3/16″ Clearance .010″
Hand Rear Service
Lining Woven **Diagram 37-2**

Buick **Model 80** **Year 1937** Diagram on Page 58

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 120
Frame Connection Negative

Lighting Mazda 2320-L **Head Lights** 6-8, 32-21 C.P.
Mazda 1154 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 3 C.P.
Mazda 55 **Parking Lights** 6-8, 1.5 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 25 Amps. Hot **Speed** 4200 R.P.M., Arm.
Regulation Voltage **Cut-in** 6.5 Volts, 800 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .013″
Spark Plug—Size 18 M.M. **Gap** .022″
Firing Order 1-6-2-5-8-3-7-4
Timing 10° B.T.C. Spark Half Advance

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81

Piston Ring—Width Oil 2—3/16″ Comp. 2—3/16″
Diam. 3 7/16″ **Gap** Oil .010″ Comp. .010″

Oiling—Type Gear Pump **Capacity** 8 Qts. **Pressure** 45 Lbs.@35 M.P.H

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance Hot .015″ Operating, .004″ Timing
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance Hot .015″ Operating, .004″ Timing

Carburetor Stromberg AA2

Steering Caster 3/8° Camber 1/4° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Clutch Long **Facings** Woven 6 1/2″ x 11″ x .137″ 2 Required

Gear Ratio Ring Gear 38 Pinion 9 Hypoid Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 22 11/16″ x 2″ x 3/16″ Clearance .010″
Rear 22 11/16″ x 2″ x 3/16″ Clearance .010″
Hand Rear Service

Lining Woven **Diagram 37-3**

Buick **Model 90** **Year 1937** Diagram on Page 58

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 120

Frame Connection Negative

Lighting Mazda 2320L **Head Lights** 6-8, 32-21 C.P.

Mazda 1154 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

Mazda 55 **Parking Lights** 6-8, 1.5 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 25 Amps. Hot **Speed** 4200 R.P.M., Arm.
Regulation Voltage **Cut-in** 6.5 Volts, 800 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .013″
Spark Plug—Size 18 M.M. **Gap** .022″
Firing Order 1-6-2-5-8-3-7-4
Timing 10° B.T.C. Spark Half Advance

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81

Piston Ring—Width Oil 2—3/16″ Comp. 2—3/16″
Diam. 3 7/16″ **Gap** Oil .010″ Comp. .010″

Oiling—Type Gear Pump **Capacity** 8 Qts.
Pressure 45 Lbs. @ 35 M.P.H.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.

Intake Clearance Hot .015″ Operating, .004″ Timing

Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.

Exhaust Clearance Hot .015″ Operating, .004″ Timing

Carburetor Stromberg AA2

Steering Caster −3/8° Camber −1/4° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

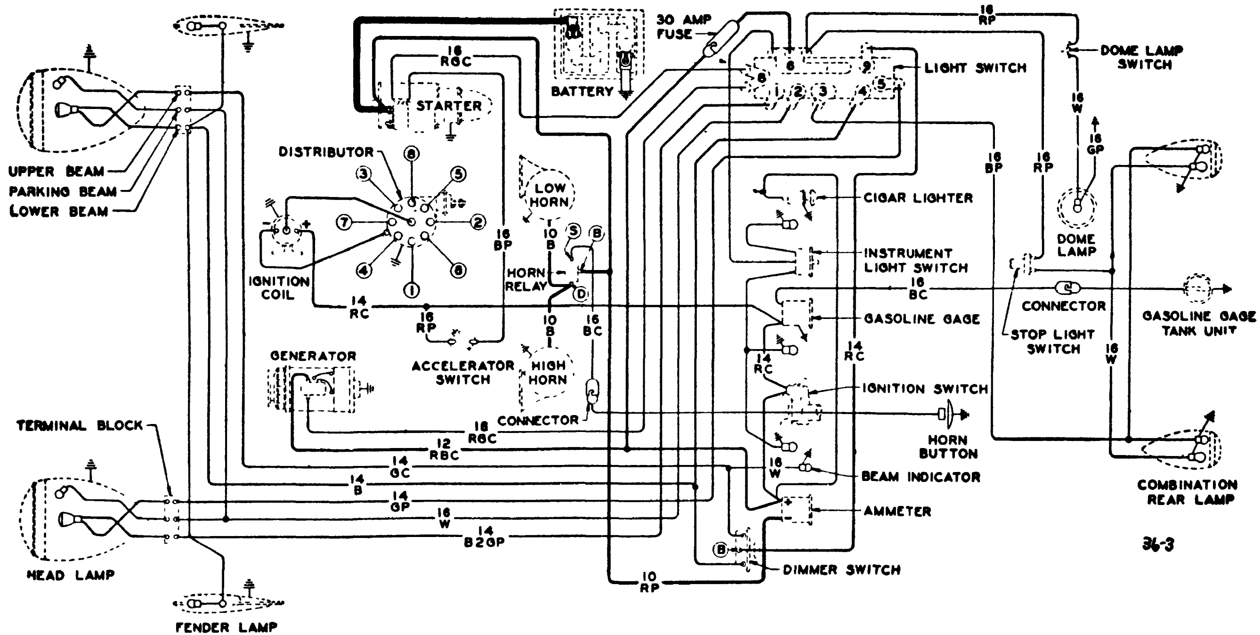
Clutch Long **Facings** Woven 6 1/2″ x 11″ x .137″ 2 Required

Gear Ratio Ring Gear 37 Pinion 8 Hypoid Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 26 13/16″ x 2″ x 1/4″ Clearance .010″
Rear 26 13/16″ x 2″ x 1/4″ Clearance .010″
Hand Rear Service

Lining Woven Diagram 37-4



BUICK WIRING DIAGRAM, 1936, SERIES 40

Courtesy of Buick Motor Company

Buick **Model Series 40** **Year 1936**

Battery Delco **Type** 13 JW **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting Mazda 2320-L **Head Lights** 6-8, 32-21 C.P.
Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 17 to 20 Amps. **Speed** 31 M.P.H.
Regulation 3rd Brush **Cut-in** 6.4-7 Volts
Relay Air Gap **Contact Gap** .018″-.025″

Ignition Remy
Contact Breaker Gap .012″
Spark Plug—Size 18 M.M. **Gap** .020″-.025″
Firing Order 1-6-2-5-8-3-7-4
Timing 2° Full Advance

Engine **Bore** 3 3/32″ **Stroke** 3 1/8″ **Taxable H.P.** 30.63
Piston Ring—Width Oil 2—5/32″ Comp. 2—1/8″
Diam. 3 3/32″ **Gap** Oil .010″-.018″ Comp. .010″-.015″
Oiling—Type Pump **Capacity** 7 Qts. Refill 6 Qts.

Valves **Intake Timing—Open** 8° B.T.C. **Close** 58° A.B.C.
Intake Clearance .015″
Exhaust Timing—Open 58° B.B.C. **Close** 23° A.T.C.
Exhaust Clearance .015″

Carburetor Stromberg EE1

Steering Caster 3° to 3 1/2° Camber 2° Toe-in 3/16″

Cooling System Centrifugal **Type** Pump **Capacity** 13 1/4 Qts.

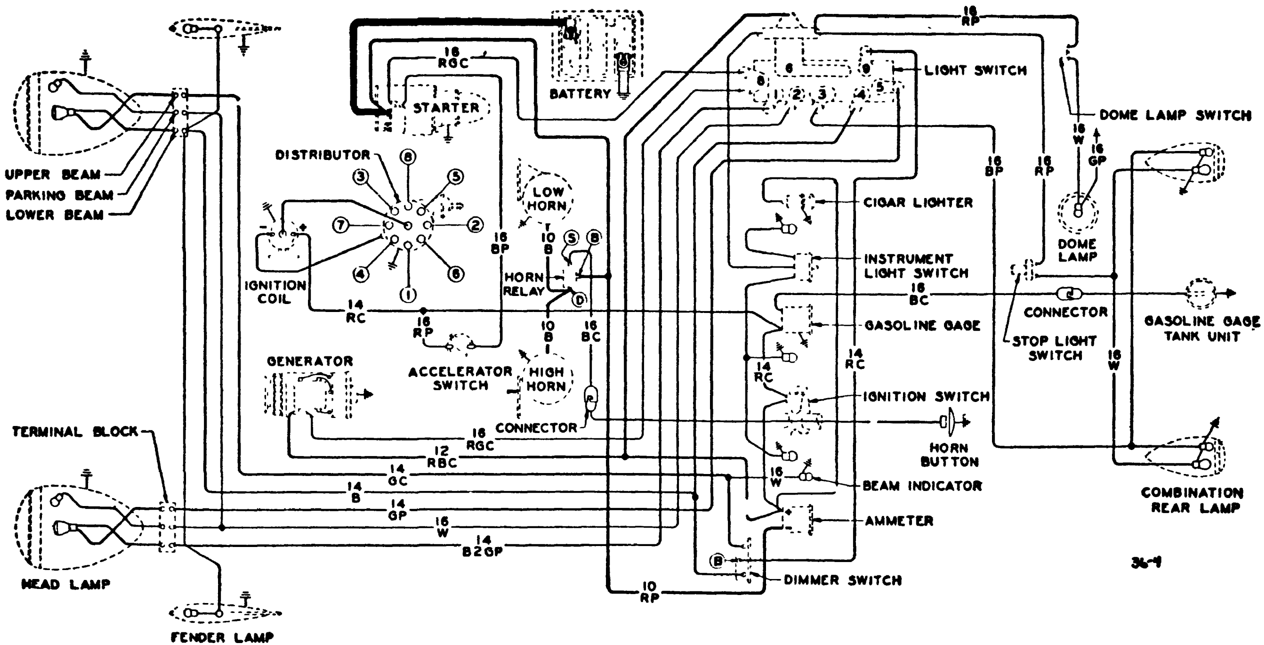
Clutch Borg & Beck **Facings** Woven 6 1/8″ x 9 1/2″ x .133″ 2 Required

Gear Ratio 4.44 to 1 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 22 11/16″ x 1 3/4″ x 3/16″ Clearance .010″
Rear 22 11/16″ x 1 3/4″ x 3/16″
Hand Rear Service

Lining Woven **Diagram 36-3**



BUICK WIRING DIAGRAM, 1936, SERIES 60-80

Courtesy of Buick Motor Company

Buick **Models Series 60-80** **Year 1936**

Battery Delco **Type** 15-G-W **Volts** 6 **Amps.** 120
Frame Connection Negative

Lighting Mazda 2320L **Head Lights** 6-8, 32-21 C.P.
Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 1.5 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 15-18 Amps. **Speed**
Regulation 3rd Brush and Voltage Control **Cut-in** 6.4-7 Volts
Contact Gap .018″-.025″

Ignition Remy **Contact Breaker Gap** .0125″-.0175″
Spark Plug—Size 18 M.M. **Gap** .020″-.025″
Firing Order 1-6-2-5-8-3-7-4
Timing 10° Full Advance

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81
Piston Ring—Width Oil 2—5/32″ Comp. 2—1/8″
Diam. 3 7/16″ **Gap** Oil .010″-.018″ Comp. .010″-.015″
Oiling—Type Pump **Capacity** 10 Qts. Refill 8 Qts.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance .015″
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance .015″

Carburetor Stromberg EE22

Steering Caster 1 3/4° to 2 1/4° Camber 1/4° Toe-in 1/16″ to 1/8″

Cooling System Centrifugal **Type** Pump **Capacity** 17 Qts.

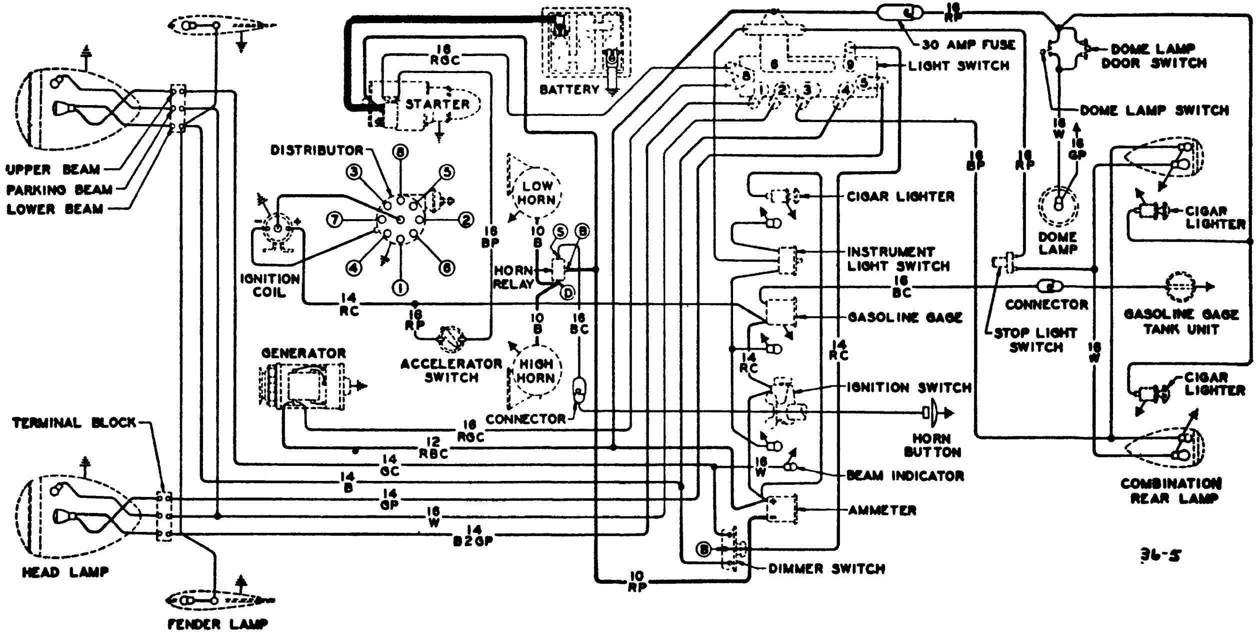
Clutch Long **Facings** Woven 6 1/2″ x 11″ x .137″ 2 Required

Gear Ratio 60, 3.9 to 1; 80, 4.22 to 1 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22 11/16″ x 1 3/4″ x 3/16″ Clearance .010″
- **Rear** 22 11/16″ x 1 3/4″ x 3/16″
- **Hand** Rear Service

Lining Woven Diagram 36-4



BUICK WIRING DIAGRAM, 1936, SERIES 90

Courtesy of Buick Motor Company

Buick ***Model Series 90*** ***Year 1936***

Battery Delco **Type** 15-G-W **Volts** 6-8 **Amps.** 120
Frame Connection Negative

Lighting Mazda 2320L **Head Lights** 6-8, 32-21 C.P.
Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 1.5 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 15-18 Amps. Hot **Speed** 33 M.P.H.
Regulation 3rd Brush and Voltage Control **Cut-in** 6.4-7 Volts
Contact Gap .018″-.025″

Ignition Delco-Remy
Contact Breaker Gap .0125″-.0175″
Spark Plug—Size 18 M.M. **Gap** .020″-.025″
Firing Order 1-6-2-5-8-3-7-4
Timing 10° Full Advance

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81
Piston Ring—Width Oil 2—5/32″ Comp. 2—1/8″
Diam. 3 7/16″ **Gap** Oil .010″-.018″ Comp. .010″-.015″
Oiling—Type Pump **Capacity** 10 Qts. **Refill** 8 Qts.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 70° A.B.C.
Intake Clearance .015″
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance .015″

Carburetor Stromberg EE22

Steering Caster 3/4°-1 1/4° Camber 1/4° Neg. to 3/4° Pos. **Toe-in** 1/16″ to 1/8″

Cooling System Centrifugal **Type** Pump **Capacity** 17 Qts.

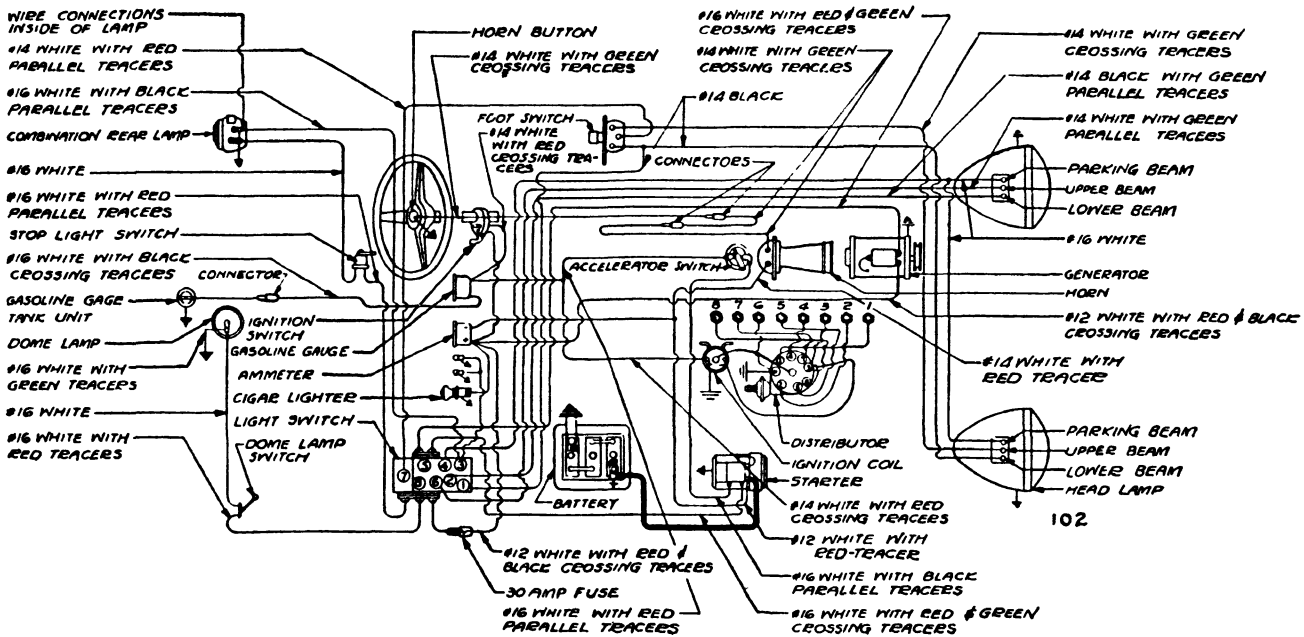
Clutch Long **Facings** Woven 6 1/2″ x 11″ x .137″ 2 Required

Gear Ratio 4.555 to 1 Spiral Gears

Axle 3/4-Floating

Brakes Bendix Hydraulic
Front 26 13/16″ x 2″ x 1/4″ Clearance .010″
Rear 26 13/16″ x 2″ x 1/4″ Clearance .010″
Hand Rear Service

Lining Woven Diagram 36-5



BUICK WIRING DIAGRAM, 1935, SERIES 40
Courtesy of Buick Motor Company

Buick **Model Series 40** **Year 1935**

Battery Delco-Remy **Type** 13 JW **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting Mazda 2320C **Head Lights** 6-8, 32-21 C.P.
Mazda 63L, 81L **Dash, Tail and Stop** 6-8, 3-3-6 C.P.
Mazda 63L **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13 Amps. **Speed** 3000 R.P.M. Armature
Regulation 3rd Brush **Cut-in** 6.7 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .0125″-.0175″
Spark Plug—Size 18 M.M. **Gap** .020″
Firing Order 1-6-2-5-8-3-7-4
Timing 2° B.T.C. Full Advance

Engine **Bore** 3$\frac{3}{32}$″ **Stroke** 3$\frac{7}{8}$″ **Taxable H.P.** 30.63
Piston Ring—Width Oil 2—$\frac{5}{32}$″ Comp. 2—$\frac{1}{8}$″
Diam. 3$\frac{3}{32}$″ **Gap** .010″ on All
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 54° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 57½° B.B.C. **Close** 21° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg EE1

Steering Caster 2¾° Camber ¼° Toe-in $\frac{1}{8}$″

Cooling System Centrifugal **Type** Pump **Capacity** 3½ Gals.

Clutch Borg & Beck **Facings** Moulded 6$\frac{1}{8}$″ x 9$\frac{3}{8}$″ x .133″ 2 Required

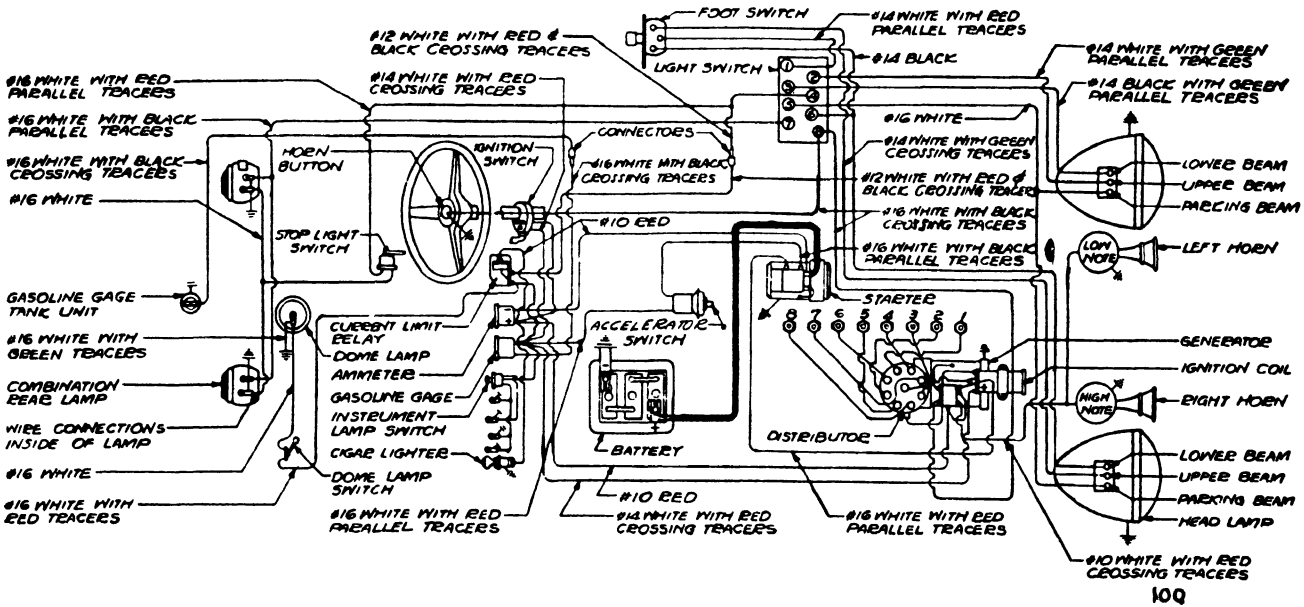
Gear Ratio Ring Gear 39 Pinion 9

Axle Own Semi-Floating

Brakes Mechanical Bendix
- **Front** 25$\frac{7}{8}$″ x 1¾″ x $\frac{3}{16}$″ Clearance .010″
- **Rear** 25$\frac{7}{8}$″ x 1¾″ x $\frac{3}{16}$″ Clearance .010″
- **Hand** 4 Wheels

Lining Moulded

Diagram 102



BUICK WIRING DIAGRAM, 1935, SERIES 50
Courtesy of Buick Motor Company

Buick Model Series 50 Year 1935 After Engine No. 2886405

Battery Delco-Remy **Type** 13 JW **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting Mazda 2330L **Head Lights** 6-8, 32-32 C.P.
Mazda 63L, 81L **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Mazda 63L **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13 Amps. **Speed** 2400 R.P.M. Armature
Regulation 3rd Brush **Cut-in** 6.7-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .013″
Spark Plug—Size 18 M.M. **Gap** .020″
Firing Order 1-6-2-5-8-3-7-4
Timing 7° B.T.C. Full Advance

Engine **Bore** 2 31/32″ **Stroke** 4 1/4″ **Taxable H.P.** 28.20
Piston Ring—Width Oil 2—5/32″ Comp. 2—1/8″ **Diam.** 2 31/32″
Gap .010″ on All
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 4 1/2° B.T.C. **Close** 54° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 58° B.B.C. **Close** 30° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Marvel ED1S

Cooling System Centrifugal **Type** Pump **Capacity** 3 7/8 Gals.

Clutch Own **Facings** Woven 6 1/4″ x 9 1/2″ x .130″ 2 Required

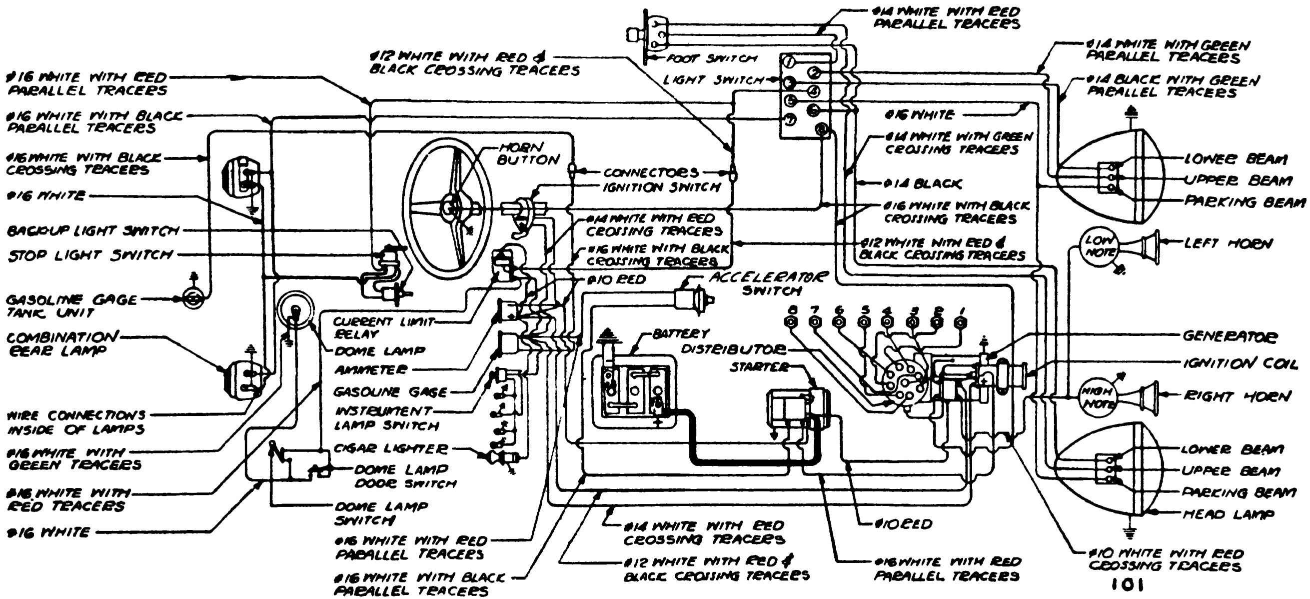
Gear Ratio Ring Gear 44 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Mechanical Bendix
- **Front** 25 1/8″ x 1 3/4″ x 3/16″
- **Rear** 25 1/8″ x 1 3/4″ x 3/16″
- **Hand** 4 Wheels

Lining Moulded and Woven

Diagram 100



BUICK WIRING DIAGRAM, 1935, SERIES 60 AND 90

Courtesy of Buick Motor Company

Buick **Model Series 60 and 90**
Year 1935 **60, After Engine No. 2886415**
90, After Engine No. 2886638

Battery Delco-Remy **Type** 60, 15 GW; 90, 17 DW **Volts** 6 **Amps.** 60, 120; 90, 135

Frame Connection Negative

Lighting Mazda 2330L **Head Lights** 6-8, 32-32 C.P.

Mazda 63L, 81L **Dash, Tail and Stop** 6-8, 3-3-15 C.P.

Mazda 63L **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13 Amps. **Speed** 2400 R.P.M. Armature

Regulation 3rd Brush **Cut-in** 6.7-7.5 Volts

Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .013″

Spark Plug—Size 18 M.M. **Gap** .020″

Firing Order 1-6-2-5-8-3-7-4

Timing 11° B.T.C. Full Advance

Engine **Bore** 60, $3\frac{3}{32}$″; 90, $3\frac{5}{16}$″ **Stroke** 60, $4\frac{5}{8}$″; 90, 5″ **Taxable H.P.** 60, 30.63; 90, 35.12

Piston Ring—Width Oil 2—$\frac{5}{32}$″ Comp. 2—$\frac{1}{8}$″
Diam. as Bore **Gap** .010″ on All

Oiling—Type Pump **Capacity** 60, 8 Qts.; 90, 9 Qts.

Valves **Intake Timing—Open** $4\frac{1}{2}$° B.T.C. **Close** 54° A.B.C.

Intake Clearance .008″ Hot

Exhaust Timing—Open 58° B.B.C. **Close** 30° A.T.C.

Exhaust Clearance .008″ Hot

Carburetor 60, Marvel ED2S; 90, Marvel ED3

Cooling System Centrifugal **Type** Pump **Capacity** 60, $4\frac{1}{2}$ Gals.; 90, $5\frac{3}{4}$ Gals.

Clutch Own **Facings** Woven 60, $6\frac{1}{4}$″ x $9\frac{7}{8}$″ x .130″; 90, $6\frac{1}{2}$″ x 9″ x .135″

Gear Ratio 60, Ring Gear 47 Pinion 10 Spiral Gears

90, Ring Gear 48 Pinion 11 Spiral Gears

Axle Own $\frac{3}{4}$-Floating

Brakes Mechanical Bendix
- **Front** 60, $28\frac{27}{32}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″; 90, $28\frac{27}{32}$″ x $2\frac{1}{4}$″ x $\frac{3}{16}$″
- **Rear** 60, $28\frac{27}{32}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″; 90, $28\frac{27}{32}$″ x $2\frac{1}{4}$″ x $\frac{3}{16}$″
- **Hand** 4 Wheels

Lining Moulded and Woven

Diagram 101

Buick Models 34-61, 66, 67, 68 34-90, 91, 96, 97, 98 — Year 1934 — Series 60 and 90

Battery Delco **Type** 60, 15 GW; 90, 17 GW **Volts** 6 **Amps.** 60, 114; 90, 130
Frame Connection Negative

Lighting

Mazda 2330L	**Head Lights**	6-8, 32-32 C.P.
Mazda 63, 87	**Dash, Tail and Stop**	6-8, 3-3-15 C.P.
Mazda 63	**Side Lights**	6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 11-14 Amps. **Speed** 2200-2600 R.P.M.
Regulation 3rd Brush **Cut-in** 6.7-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .015″
Spark Plug—Size 18 MM. **Gap** .020″-.025″
Firing Order 1-6-2-5-8-3-7-4
Timing 60, 11° B.T.C.; 90, 10° B.T.C.

Engine **Bore** 60, 3 3/32″; 90, 3 5/16″ **Stroke** 60, 4 5/8″; 90, 5″ **Taxable H.P.** 60, 30.63; 90, 35.12

Piston Ring—Width Oil 2—5/32″ Comp. 2—1/8″ **Diam.** 3 5/16″
Gap .010″ on All

Oiling—Type Pump **Capacity** Dry 60, 11½ Qts.; 90, 12½ Qts.

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 54° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 58° B.B.C. **Close** 30° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor 60, Marvel ED 2S; 90, Marvel ED 3

Steering Caster 60, 1°; 90, 1° Camber 60, ½°; 90, 1° Toe-in 60, 5/32″; 90, 5/32″

Cooling System Centrifugal **Type** Pump **Capacity** 60, 4½ Gals.; 90, 5¾ Gals.

Clutch Own **Facings** Woven 60, 6¼″ x 9⅞″ x 130″ 2 Required; 90, 6½″ x 9″ x .135″ 4 Required

Gear Ratio Ring Gear 60, 47; 90, 48 Pinion 60, 10, 90, 11 Spiral Gears

Axle Own ¾ Floating

Brakes Own Bendix Mechanical
- **Front** 60, 28, 27/32″ x 1¾″ x 3/16″; 90, 28 27/32″ x 2¼″ x 3/16″
- **Rear** As for Front
- **Hand** 4 Wheels

Lining Moulded and Woven

Buick Models 34-41, 46, 47, 48 Year 1934 Series 40

Battery Delco **Type** 13-JW **Volts** 6 **Amps.** 98
Frame Connection Negative

Lighting Mazda 2330L **Head Lights** 6-8, 32-32 C.P.
Dash, Tail and Stop 3-3-6 C.P.
Side Lights 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13-15 Amps. **Speed** 3000 R.P.M
Regulation 3rd Brush **Cut-in** 6.7-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .015″-.017″
Spark Plug—Size 18 MM. **Gap** .020″-.025″
Firing Order 1-6-2-5-8-3-7-4
Timing Standard Fuel 2°, Ethyl 8° B.T.C.

Engine **Bore** 3 3/32″ **Stroke** 3 7/8″ **Taxable H.P.** 30-63
Piston Ring—Width Oil 2—5/32″ Comp. 2—1/8″ **Diam.** 3 3/32″
Gap .010″ on All
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 40° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 57½° B.B.C. **Close** 21° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Marvel ED1S

Steering Caster 1¾° Camber ½° Toe-in 5/32″

Cooling System Centrifugal **Type** Pump **Capacity** 3 7/8 Gals.

Clutch Own **Facings** Woven 6¼″ x 9½″ x .130″ 2 Required

Gear Ratio Ring Gear 44 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Own Bendix Mechanical
- **Front** 25″ x 1¾″ x 3/16″
- **Rear** 25″ x 1¾″ x 3/16″
- **Hand** 4 Wheels

Lining Moulded and Woven

Buick **Models 34-56, 57, 58** **Year 1934** **Series 50**

Battery Delco **Type** 13-JW **Volts** 6 **Amps.** 98
Frame Connection Negative

Lighting Mazda 2330L **Head Lights** 6-8, 32-32 C.P.
Mazda 63, 87 **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 11-14 Amps. **Speed** 2200-2600 R.P.M
Regulation 3rd Brush **Cut-in** 6.7-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .015″
Spark Plug—Size 18 MM. **Gap** .020″-.025″
Firing Order 1-6-2-5-8-3-7-4
Timing 7° B.T.C. .0198″ Piston Travel B.T.C.

Engine **Bore** 2²¹⁄₃₂″ **Stroke** 4¼″ **Taxable H.P.** 28.2
Piston Ring—Width Oil 2—5⁄32″ Comp. 2—⅛″ **Diam.** 2²¹⁄₃₂″
Gap .010″ on All
Oiling—Type Pump **Capacity** 9 Qts. Dry

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 54° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 58° B.B.C. **Close** 30° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Marvel ED1S

Steering Caster 1¾° Camber ½° Toe-in. 5⁄32″

Cooling System Centrifugal **Type** Pump **Capacity** 3⅞ Gals.

Clutch Own **Facings** Woven 6¼″ x 9½″ x .130″ 2 Required

Gear Ratio Ring Gear 44 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Own Bendix Mechanical
- **Front** 25⅛″ x 1¾″ x 3⁄16″
- **Rear** 25⅛″ x 1¾″ x 3⁄16″
- **Hand** 4 Wheels

Lining Moulded and Woven

Buick **Model 33-50** **Year 1933**

Battery Delco **Type** 13 JW **Volts 6** **Amps.** 98

Frame Connection Negative

Lighting Double Contact **Head Lights** 6-8, 32-32 C.P.

Single Contact **Stop Light** 6-8, 15 **Tail, 3 C.P.**

Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 11-14 Amps. **Speed** 1800-2000 R.P.M.

Regulation 3rd Brush, Thermo. **Cut-in** 8-10 M.P.H.

Relay Air Gap .012″-.017″ **Contact Gap.** .015″-.025″

Ignition **Contact Breaker Gap** .0125″-.0175″

Spark Plug—Size 18 M.M. **Gap** .020″-.025″

Firing Order—1-6-2-5-8-3-7-4

Timing 7° B.T.D.C. Full Manual Adv.

Engine **Bore** 2-15/16″ **Stroke** 4-1/4″ **Taxable H.P.** 27.61

Piston Ring—Width 2-5/32″, 2-1/8″ **Diam.** 2-15/16″ **Gap** All rings .010″

Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 4-1/2° B.T.C. **Close** 54° A.B.C.

Intake Clearance .008″ Hot

Exhaust Timing—Open 58° B.B.C. **Close** 30° A.T.C.

Exhaust Clearance .008″ Hot

Carburetor Marvel E.D 1.S.

Cooling System—Centrifugal **Type** Pump **Capacity 3 Gals.**

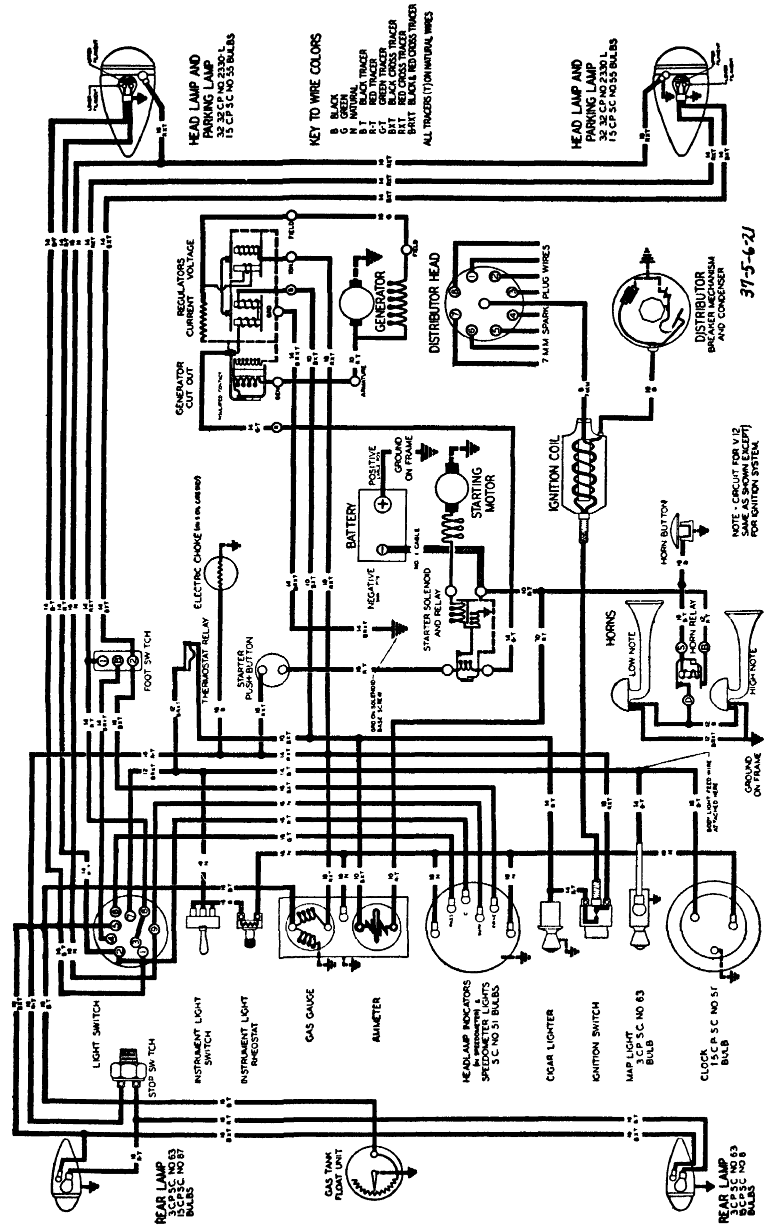
Clutch Own **Facing** Woven 9-1/2″ x 6-1/4″ x .135″

Gear Ratio Ring Gear 47 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Mechanical
- **Front** 18-1/32″ x 1-3/4″ x 3/16″
- **Rear** 18-1/32″ x 1-3/4″ x 3/16″
- **Hand** All 4 Wheels

Lining—Moulded



CADILLAC WIRING DIAGRAM, 1937, MODEL 70

Courtesy of Cadillac Motor Car Company

Cadillac . **Model 70** **Year 1937**

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 130
Frame Connection Positive

Lighting Mazda 2330-L D.C. **Head Lights** 6-8, 32-32 C.P.
Mazda 87 **Stop Light** 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Mazda 55 **Parking Lights** 6-8, 1.5 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 25 Amps. Hot **Speed** 1650 R.P.M., Arm.
Regulation Voltage & Current **Cut-in** 6.5 Volts
Relay Air Gap **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .013″
Spark Plug—Size 14 M.M. **Gap** .027″
Firing Order 1L-4R-4L-2L-3R-3L-2R-1R
Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 4½″ **Taxable H.P.** 39.20
Piston Ring— **Width** Oil 2—5/32″ Comp. 2—5/32″
Diam. 3½″ **Gap** Oil .007″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 7 Qts. **Pressure** 30 Lbs. @ 60 M.P.H.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.
Intake Clearance Zero
Exhaust Timing—Open 52° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Zero

Carburetor Stromberg AA25

Steering Caster 0° Camber 0° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 25 Qts.

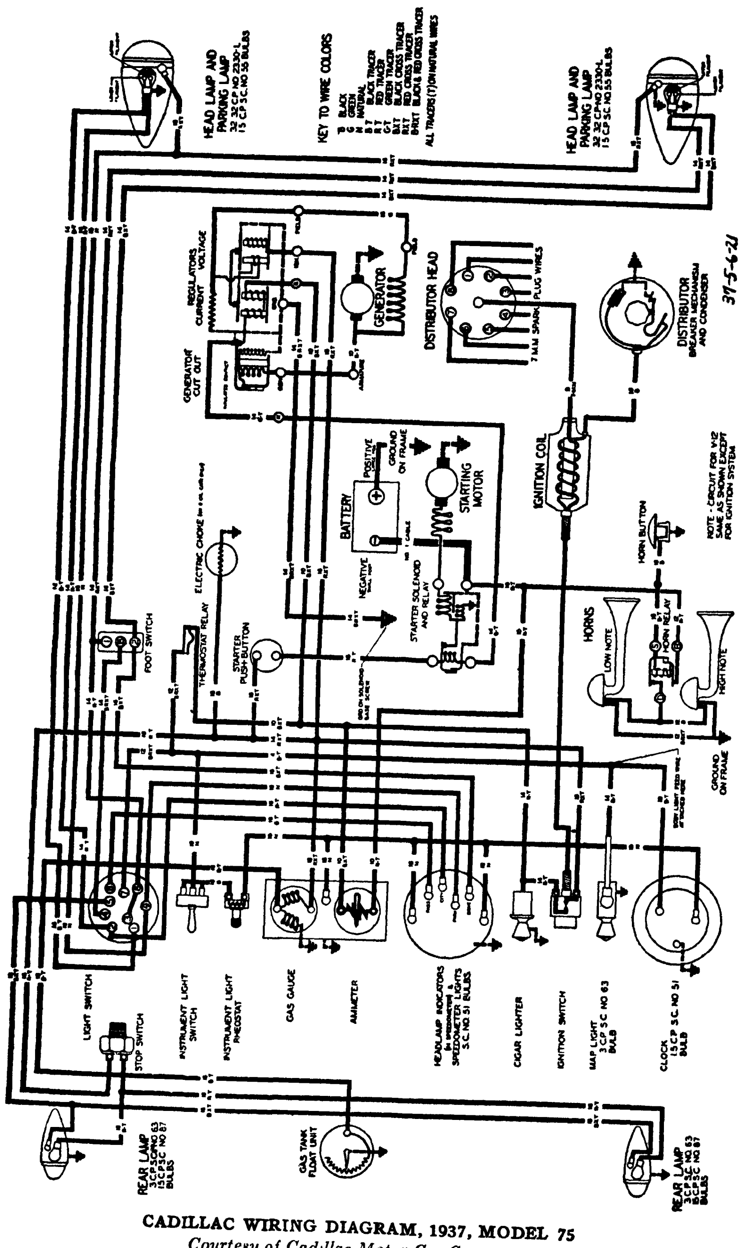
Clutch Long **Facings** Woven 6½″ x 11″ x .137″ 2 Required

Gear Ratio Ring Gear 43 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
- **Front** 25⅞″ x 2″ x 3/16″ Clearance .010″
- **Rear** 25⅞″ x 2″ x 3/16″ Clearance .010″
- **Hand** Rear Service

Lining Moulded Diagram 37-5



CADILLAC WIRING DIAGRAM, 1937, MODEL 75
Courtesy of Cadillac Motor Car Company

Cadillac **Model 75** **Year 1937**

Battery Delco-Remy **Type** **Volts 6-8** **Amps. 130**

Frame Connection Positive

Lighting Mazda 2330-L D.C. **Head Lights** 6-8, 32-32 C.P.

Mazda 87 **Stop Light** 6-8, 15 C.P. **Tail 6-8, 3 C.P.**

Mazda 55 **Parking Lights** 6-8, 1.5 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 25 Amps. Hot **Speed** 1650 R.P.M., Arm.

Regulation Voltage & Current **Cut-in 6.5 Volts**

Relay Air Gap **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .013″

Spark Plug—Size 14 M.M. **Gap** .027″

Firing Order 1L-4R-4L-2L-3R-3L-2R-1R

Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 4½″ **Taxable H.P.** 39.20

Piston Ring—Width Oil 2—5/32″ Comp. 2—5/32″

Diam. 3½″ **Gap** Oil .007″ Comp. .007″

Oiling—Type Gear Pump **Capacity** 7 Qts. **Pressure** 30 Lbs. @ 60 M.P.H.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.

Intake Clearance Zero

Exhaust Timing—Open 52° B.B.C. **Close** 10°A.T.C.

Exhaust Clearance Zero

Carburetor Stromberg AA25

Steering Caster 0° Camber 0° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity 25 Qts.**

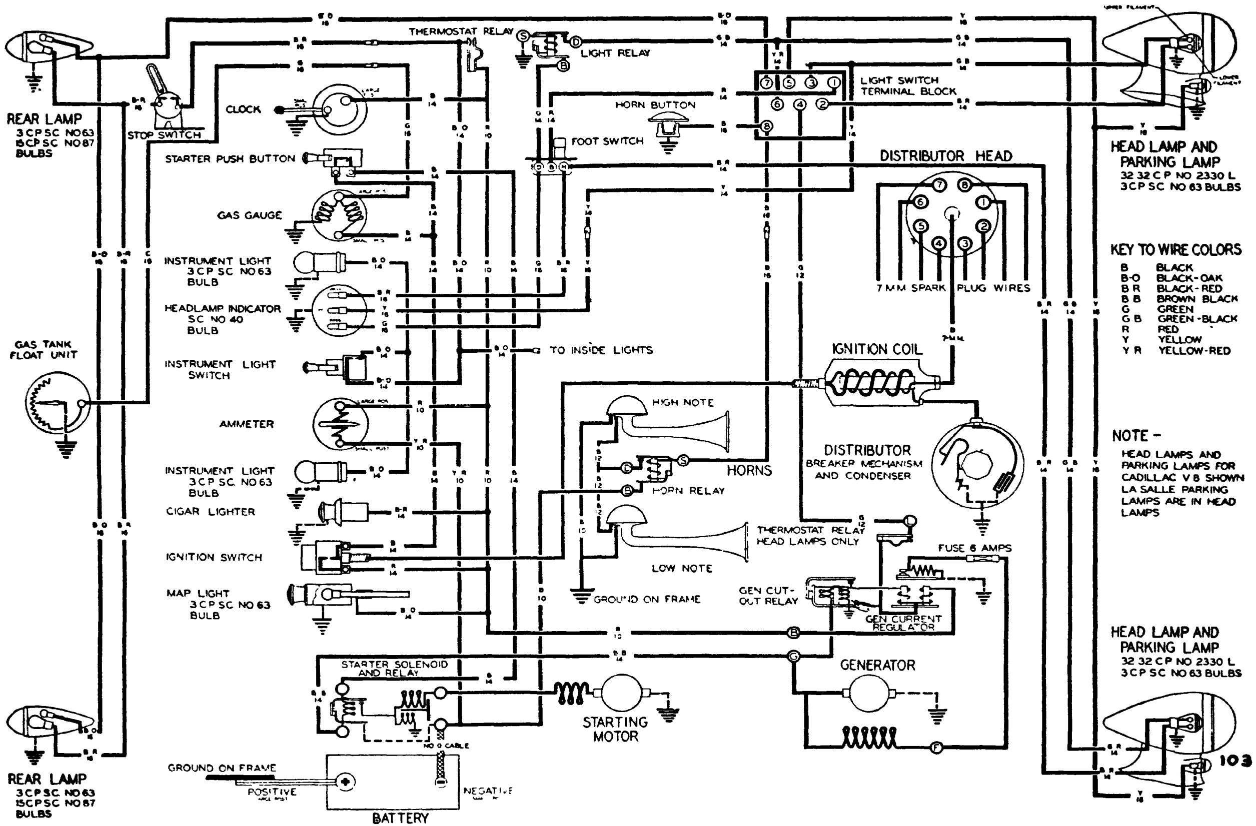
Clutch Long **Facings** Woven 6½″ x 11″ x .137″ 2 Required

Gear Ratio Ring Gear 46 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
- **Front** 30″ x 2¼″ x ¼″ Clearance .010″
- **Rear** 27¼″ x 2¼″ x ¼″ Clearance .010″
- **Hand** Rear Service

Lining Moulded **Diagram 37-6**



CADILLAC WIRING DIAGRAM, 1935, MODEL 355-D

Courtesy of Cadillac Motor Car Company

Cadillac **Model 355-D** **Year 1935**

Battery Delco **Type** 17 DW **Volts** 6 **Amps.** 130

Frame Connection Positive

Lighting	Mazda 2330-L	**Head Lights**	6-8, 32-32 C.P.
	Mazda 63L, 87L	**Dash, Tail and Stop**	6-8, 3-3-15 C.P.
	Mazda 63L	**Side Lights**	6-8, 3 C.P.

Starter and Generator

Generator Hot **Max. Chg. Rate** 15.5 Amp. **Speed**

Regulation 3rd Brush **Cut-in** 6.75-7.25 Volts

Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .012″-.018″

Spark Plug—Size 18 M.M. **Gap** .025″-.027″

Firing Order 1-2-7-8-4-5-6-3

Timing 4° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4 15/16″ **Taxable H.P.** 36.45

Piston Ring—Width Oil 1—3/16″ Comp. 3—3/32″

Diam. 3⅜″ **Gap.** Oil .007″ Comp. .007″

Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 6° B.T.C. **Close** 42° A.B.C.

Intake Clearance .006″

Exhaust Timing—Open 38° B.B.C. **Close** 2° A.T.C.

Exhaust Clearance .010″

Carburetor Detroit X8244

Steering Caster 3° Camber 1° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gals.

Clutch Own **Facings** Woven 6½″ x 9½″ x .120″ 4 Required

Gear Ratio Ring Gear 46 Pinion 10 Spiral Gears

Axle Own ¾-Floating

Brakes Mechanical Bendix

- **Front** 29 27/32″ x 2″ Forward Shoe .245″, Reverse .183″ Clearance .007″
- **Rear** 29 27/32″ x 2″ Forward Shoe .245″, Reverse .183″ Clearance .007″
- **Hand** Rear Service

Lining Woven

Diagram 103

Cadillac **Model V-8 355-D** **Year 1934** **Series 10, 20, 30**

Battery Delco **Type** 17 DW **Volts** 6 **Amps.** 130
Frame Connection Positive

Lighting Mazda 2330L **Head Lights** 6-8, 32-32 C.P.
Mazda 63 **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 9-11 Amps. Lamps Off **Speed** 1200 R.P.M.
Regulation Thermostat Relay **Cut-in** 6.75 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 18 MM. **Gap** .025″-.027″
Firing Order 1-2-7-8-4-5-6-3 See Diagram
Timing 4° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4$\frac{15}{16}$″ **Taxable H.P.** 36.45
Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp. 3—$\frac{3}{32}$″
Diam. 3⅜″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 6° B.T.C. **Close** 42° A.B.C.
Intake Clearance .006″ Cold
Exhaust Timing—Open 38° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .010″ Cold

Carburetor Detroit X8244

Steering Camber 1° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gals.

Clutch Own **Facings** Woven 6½″ x 9½″ x .120″ 4 Required

Gear Ratio Ring Gear 46 Pinion 10 Spiral Gears

Axle Own ¾ Floating

Brakes Own Mechanical Bendix
- **Front** 29$\frac{27}{32}$″ x 2″ x .245″ Forward Shoe .183″ Reverse Shoe
- **Rear** Same as Front Clearance .007″ on All
- **Hand** Rear Service

Lining Woven

Cadillac **Model V-8 355C** **Year 1933**

Battery Delco **Type** 17-CF **Volts** 6 **Amps.** 130
Frame Connection Positive

Lighting Triple Contact **Head Lights** 6-8, 32-21-21 C.P.
Single Contact **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 14-17 Amps. **Speed** 1800-2000 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 MM. **Gap** .025″-.028″
Firing Order 1R-1L-4R-4L-2L-3R-3L-2R
Timing 9° 12″ Flywheel or .039″ Piston B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4 15/16″ **Taxable H.P.** 36.45
Piston Ring—Width Oil 1—3/16″, 1—5/32″; Comp. 1—⅛″, 2—3/32″
Diam. 3⅜″ **Gap** Oil .003″ Comp. .005″
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 6° B.T.C. **Close** 42° A.B.C.
Intake Clearance .004″ Hot
Exhaust Timing—Open 38° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .006″ Hot

Carburetor Own

Steering Caster 2½° Camber 1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 6½ Gals.

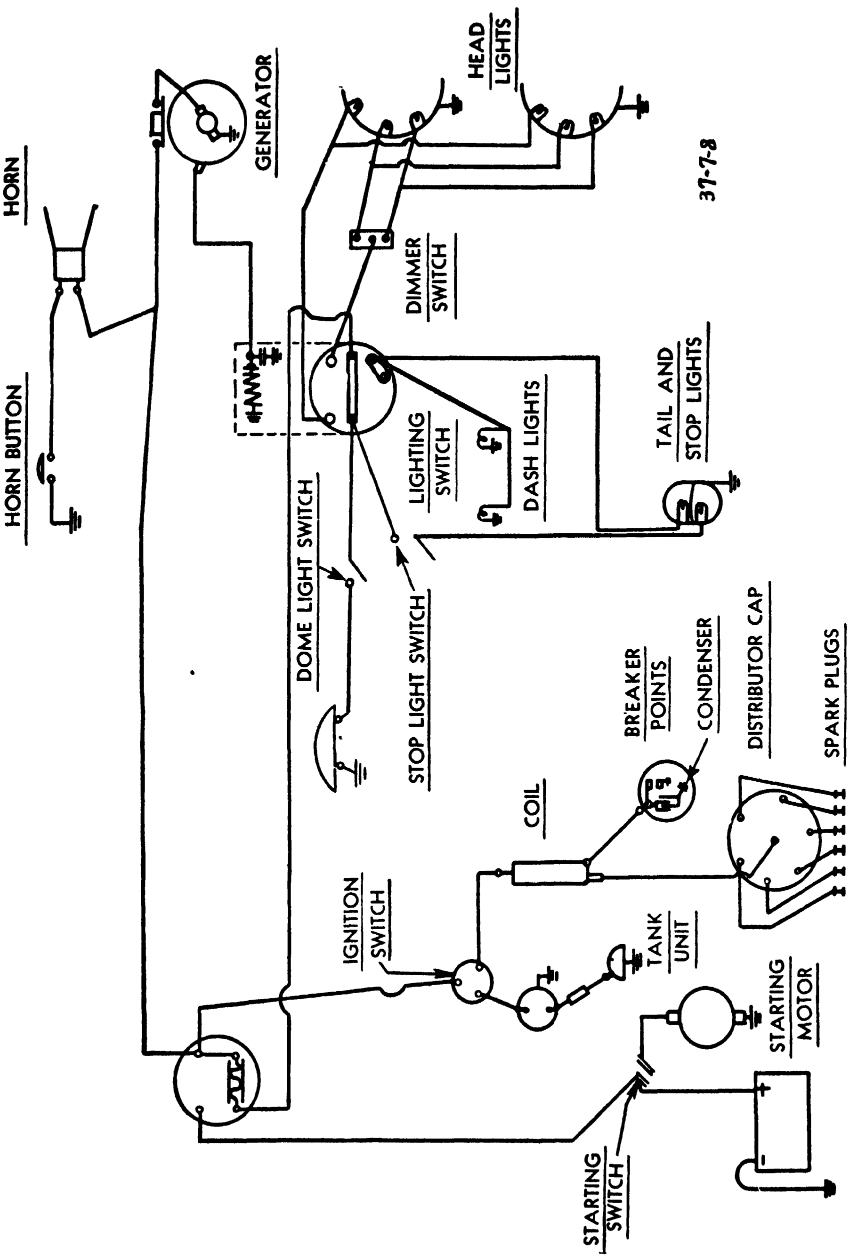
Clutch Own **Facing** Woven 5½″ x 10″ x .135″ 4 Required

Gear Ratio Ring Gear 46 Pinion 10 Spiral Gears

Axle Own ¾ Floating

Brakes Bendix Booster Mechanical
- **Front** 29¾″ x 2″ x 3/16″ Clearance .007″
- **Rear** 29¾″ x 2″ x 3/16″ Clearance .007″
- **Hand** 4 Wheels

Lining Semi-Moulded



CHEVROLET WIRING DIAGRAM, 1937, MODEL MASTER

Courtesy of Chevrolet Motor Company

Chevrolet **Model Master** **Year 1937**

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 100
Frame Connection Negative

Lighting **Head Lights** 6-8 Volts
Stop Light 6-8 Volts **Tail** 6-8 Volts
Parking Lights 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 18 Amps. Hot **Speed** 2900 R.P.M., Arm.
Regulation **Cut-in** 6.8 Volts, 800 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .018″
Spark Plug—Size 14 M.M. **Gap** .040″
Firing Order 1-5-3-6-2-4
Timing

Engine **Bore** 3½″ **Stroke** 3¾″ **Taxable H.P.** 29.50
Piston Ring—Width Oil 1—3/16″ Comp. 2—⅛″
Diam. 3½″ **Gap** Oil .005″ Comp. .005″
Oiling—Type Gear Pump **Capacity** 5 Qts.
Pressure 13 Lbs. @ 50 M.P.H.

Valves **Intake Timing—Open** 9° B.T.C. **Close** 29° A.B.C.
Intake Clearance Hot .006″
Exhaust Timing—Open 52° B.B.C. **Close** 1° B.T.C.
Exhaust Clearance Hot .013″

Carburetor Carter W1

Steering Caster 3⅓° Camber ¼° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

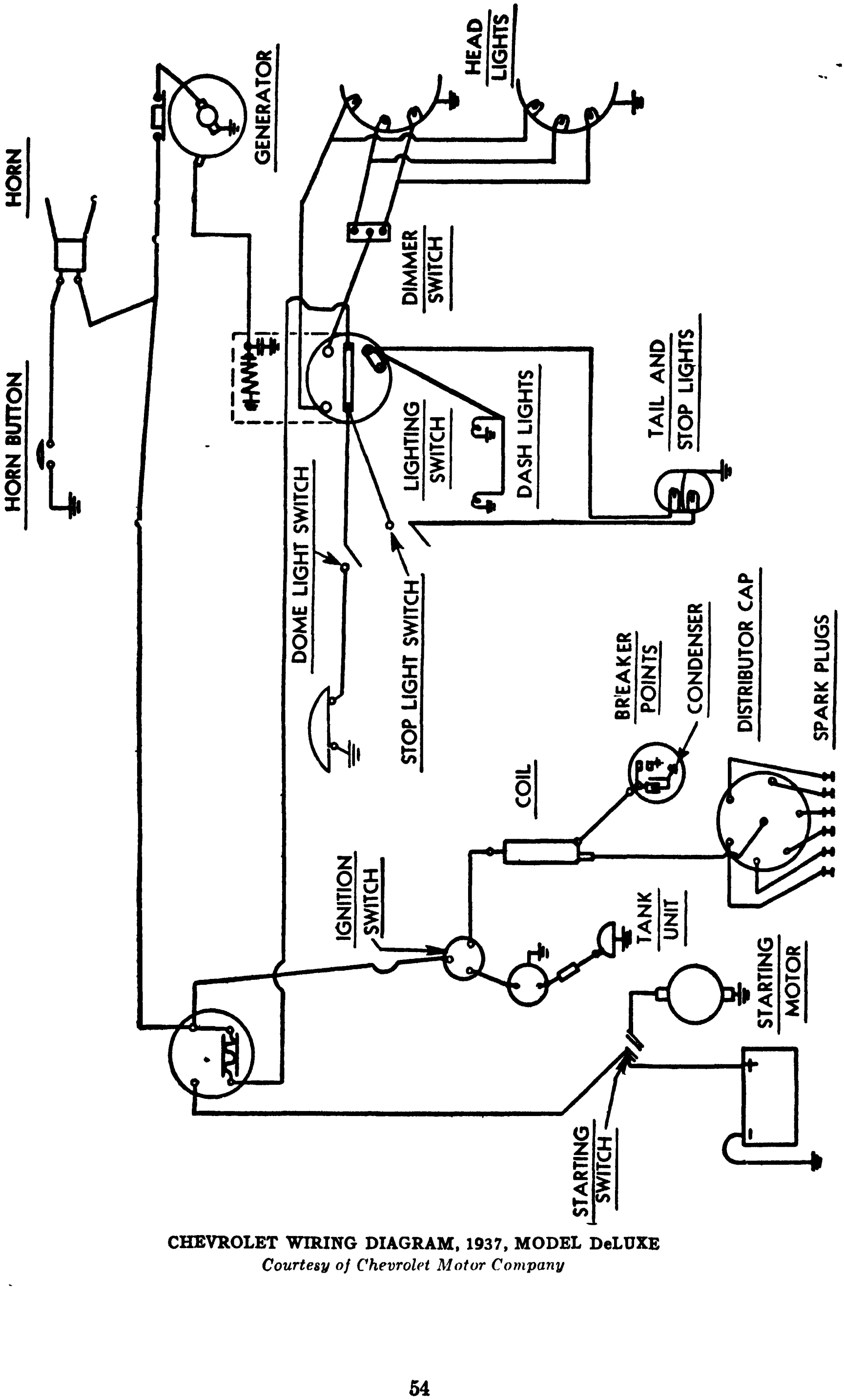
Clutch Own **Facings** Woven 6¼″ x 9″ x ⅛″ 2 Required

Gear Ratio Ring Gear 41 Pinion 11 Hypoid Gears

Axle Own Semi-Floating

Brakes Own Hydraulic
Front 22⅝″ x 1¾″ x 3/16″ Clearance, Slight Drag and Back 4 Notches
Rear 22⅝″ x 1¾″ x 3/16″ Clearance, Slight Drag and Back 4 Notches
Hand Rear Service

Lining Moulded **Diagram 37-7**



CHEVROLET WIRING DIAGRAM, 1937, MODEL DeLUXE
Courtesy of Chevrolet Motor Company

Chevrolet **Model De Luxe** **Year 1937**

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 100

Frame Connection Negative

Lighting **Head Lights** 6-8 Volts

Stop Light 6-8 Volts **Tail** 6-8 Volts

Parking Lights 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy — **Max. Chg. Rate** 18 Amps. Hot **Speed** 2900 R.P.M., Arm.

Regulation **Cut-in** 6.8 Volts, 800 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Delco-Remy — **Contact Breaker Gap** .018″

Spark Plug—Size 14 M.M. **Gap** .040″

Firing Order 1-5-3-6-2-4

Timing

Engine **Bore** 3½″ **Stroke** 3¾″ **Taxable H.P.** 29.50

Piston Ring—Width Oil 1—3/16″ Comp. 2—⅛″
Diam. 3½″ **Gap.** Oil .005″ Comp. .005″

Oiling—Type Gear Pump **Capacity** 5 Qts. **Pressure** 13 Lbs. @ 50 M.P.H.

Valves **Intake Timing—Open** 9° B.T.C. **Close** 29° A.B.C.

Intake Clearance Hot .006″

Exhaust Timing—Open 52° B.B.C. **Close** 1° B.T.C.

Exhaust Clearance Hot .013″

Carburetor Carter W1

Steering Caster 0° Camber ¼° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

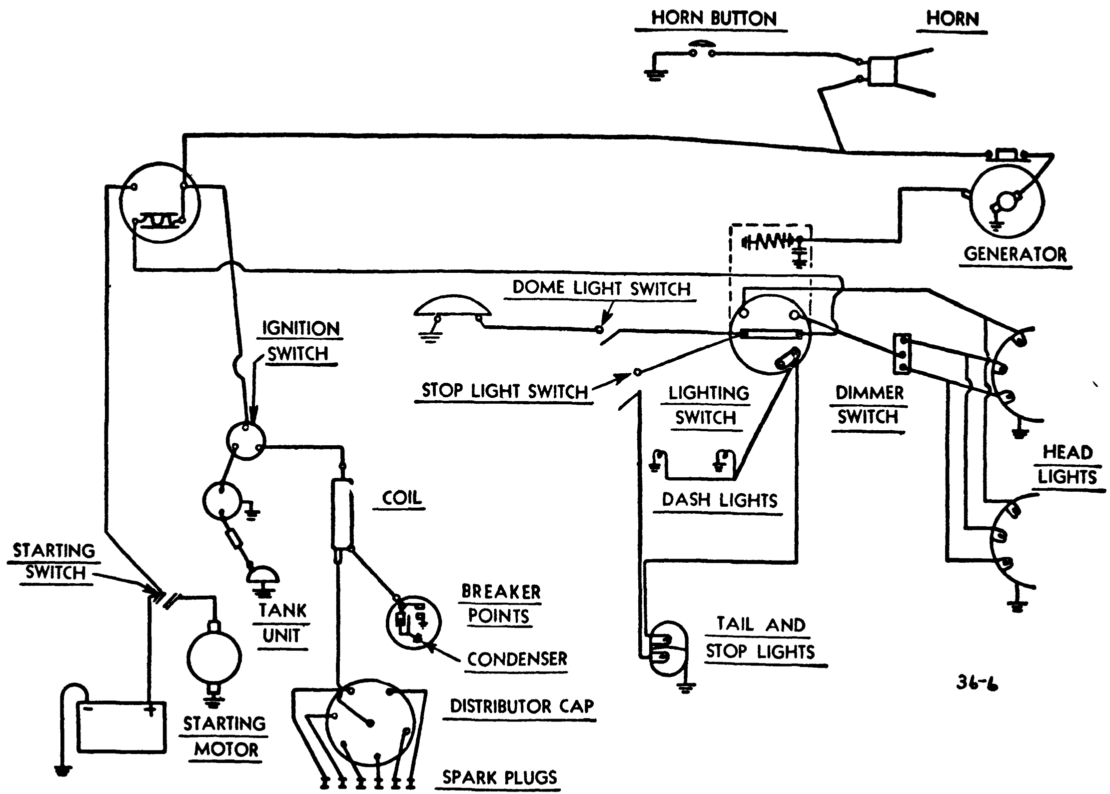
Clutch Own **Facings** Woven 6¼″ x 9″ x ⅛″ 2 Required

Gear Ratio Ring Gear 38 Pinion 9 Hypoid Gears

Axle Own Semi-Floating

Brakes Own Hydraulic
- **Front** 22⅝″ x 1¾″ x 3/16″ Clearance Slight Drag & Back 4 Notches
- **Rear** 22⅝″ x 1¾″ x 3/16″ Clearance Slight Drag & Back 4 Notches
- **Hand** Rear Service

Lining Moulded Diagram 37-8



CHEVROLET WIRING DIAGRAM, 1936, MODEL, 6-CYLINDER
Courtesy of Chevrolet Motor Company

Chevrolet **Model 6-Cylinder** **Year 1936**

Battery Delco-Remy **Type** **Volts 6** **Amps. 94**
Frame Connection Negative

Lighting **Head Lights**
Stop Light **Tail**
Parking Lights

Starter and Generator Delco-Remy

Generator **Max. Chg. Rate** 18 Amps. **Speed** 26 M.P.H.
Regulation 3rd Brush **Cut-in** 6.7 Volts
Relay Air Gap **Contact Gap**

Ignition Remy
Contact Breaker Gap .018″
Spark Plug—Size 14 M.M. **Gap** .032″
Firing Order 1-5-3-6-2-4
Timing 5° B.T.C. Retarded

Engine **Bore** $3\frac{5}{16}$″ **Stroke** 4″ **Taxable H.P.** 26.30
Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp. 2—$\frac{1}{8}$″
Diam. $3\frac{5}{16}$″ **Gap** .005″
Oiling—Type Pressure and Splash **Capacity** 5 Qts.

Valves **Intake Timing—Open** 9° B.T.C. **Close** 29° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 52° B.B.C. **Close** 1° B.T.C.
Exhaust Clearance .013″ Hot

Carburetor Carter

Steering Caster 0° Camber $\frac{1}{4}$° Toe-in $\frac{1}{16}$″

Cooling System Centrifugal **Type** Pump **Capacity** 15 Qts.

Clutch Own **Facings** Woven $6\frac{1}{4}$″ x 9″ x $\frac{1}{8}$″ 2 Required

Gear Ratio 4.1 to 1 Spiral Gears

Axle Own Semi-Floating

Brakes Own Hydraulic
Front $22\frac{5}{8}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″
Rear $22\frac{5}{8}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″
Hand Rear Service

Clearance, Slight Drag and Back-off Adjustment 4 Notches

Lining Moulded **Diagram 36-6**

Chevrolet Model Series DA Year 1934

Battery Delco **Type** 15-PW **Volts** 6 **Amps.** 94
Frame Connection Negative

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63 **Dash, Tail and Stop** 6-8, 3 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13-15 Amps. **Speed** 3000 R.P.M.
Regulation 3rd Brush **Cut-in** 7.2 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″
Spark Plug—Size 14 MM. **Gap** .032″
Firing Order 1-5-3-6-2-4
Timing 10° B.T.C.

Engine **Bore** 3$\frac{5}{16}$″ **Stroke** 4″ **Taxable H.P.** 26.3
Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp. 2—$\frac{1}{8}$″
Diam. 3$\frac{5}{16}$″ **Gap** Oil .004″ Comp. .005″
Oiling—Type Press. and Splash **Capacity** 5 Qts.

Valves **Intake Timing—Open** 4° B.T.C. **Close** 34° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 47° B.B.C. **Close** 4° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter WL

Cooling System Centrifugal **Type** Pump **Capacity** 2$\frac{5}{8}$ Gals.

Clutch Own **Facings** 6$\frac{1}{4}$″ x 9″ x $\frac{1}{8}$″ 2 Required

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Own Mechanical
- **Front** 24$\frac{9}{32}$″ x 1$\frac{3}{4}$″ x $\frac{3}{16}$″
- **Rear** 24$\frac{9}{32}$″ x 1$\frac{3}{4}$″ x $\frac{3}{16}$″
- **Hand** 4 Wheels

Lining Semi-Moulded

Chevrolet Model Series DC Year 1934

Battery Delco **Type** 13 NW and 13 PW **Volts** 6 **Amps.** 90
Frame Connection Negative

Lighting Mazda 1110 **Head Lights** 6-8, 21-21 C.P.
Mazda 63 **Dash, Tail and Stop** 6-8, 3 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 11-13 Amps. **Speed** 1750-1850 R.P.M.
Regulation 3rd Brush **Cut-in** 7.2 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″
Spark Plug—Size 14 MM. **Gap** .032″
Firing Order 1-5-3-6-2-4
Timing 10° B.T.C.

Engine **Bore** 3 5/16″ **Stroke** 3½″ **Taxable H.P.** 26.3
Piston Ring—Width Oil 1—3/16″ Comp. 2—5/32″
Diam. 3 5/16″ **Gap** .004″ on All
Oiling—Type Press. and Splash **Capacity** 4½ Qts.

Valves **Intake Timing—Open** 4° B.T.C. **Close** 34° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 47° B.B.C. **Close** 4° A.T.C.
Exhaust Clearance .013″ Hot

Carburetor Carter WL

Steering Caster 2¼° Camber 1½° Toe-in 5/64″

Cooling System Centrifugal **Type** Pump **Capacity** 2½ Gals.

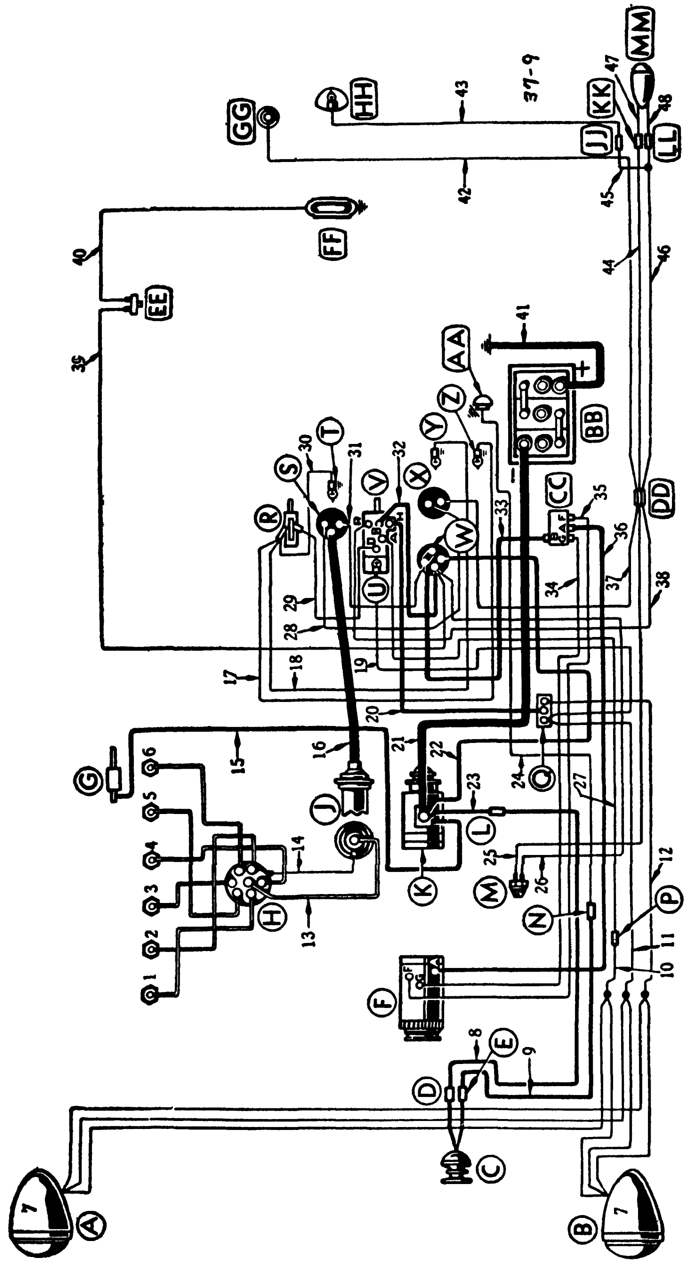
Clutch Own **Facings** Moulded 6¼″ x 9″ x ⅛″ 2 Required

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Own Mechanical
- **Front** 15¼″ x 1½″ x 3/16″
- **Rear** 15¼″ x 1½″ x 3/16″
- **Hand** 4 Wheels

Lining Moulded



CHRYSLER WIRING DIAGRAM, 1937, MODEL ROYAL 6

Courtesy of Chrysler Corporation

Chrysler **Model Royal 6** **Year 1937**

Battery Willard **Type** **Volts** 6–8 **Amps.** 105
Frame Connection Positive

Lighting **Head Lights** 6-8 Volts
Stop Light 6-8 Volts **Tail** 6-8 Volts
Parking Lights 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 22 Amps. Hot **Speed** 1900 R.P.M., Arm.
Regulation Voltage and Current **Cut-in** 7 Volts, 720 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 5° A.T.C.

Engine **Bore** 3⅜″ **Stroke** 4¼″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅜′ **Gap** Oil .005″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 50° A.B.C.
Intake Clearance Hot .006″ Operating, .014″ Timing
Exhaust Timing—Open 48° B.B.C. **Close** 2° A.B.C.
Exhaust Clearance Hot .010″ Operating, .014″ Timing

Carburetor Carter BB

Steering Caster 1½° Camber +¼° Toe-in 1/16″

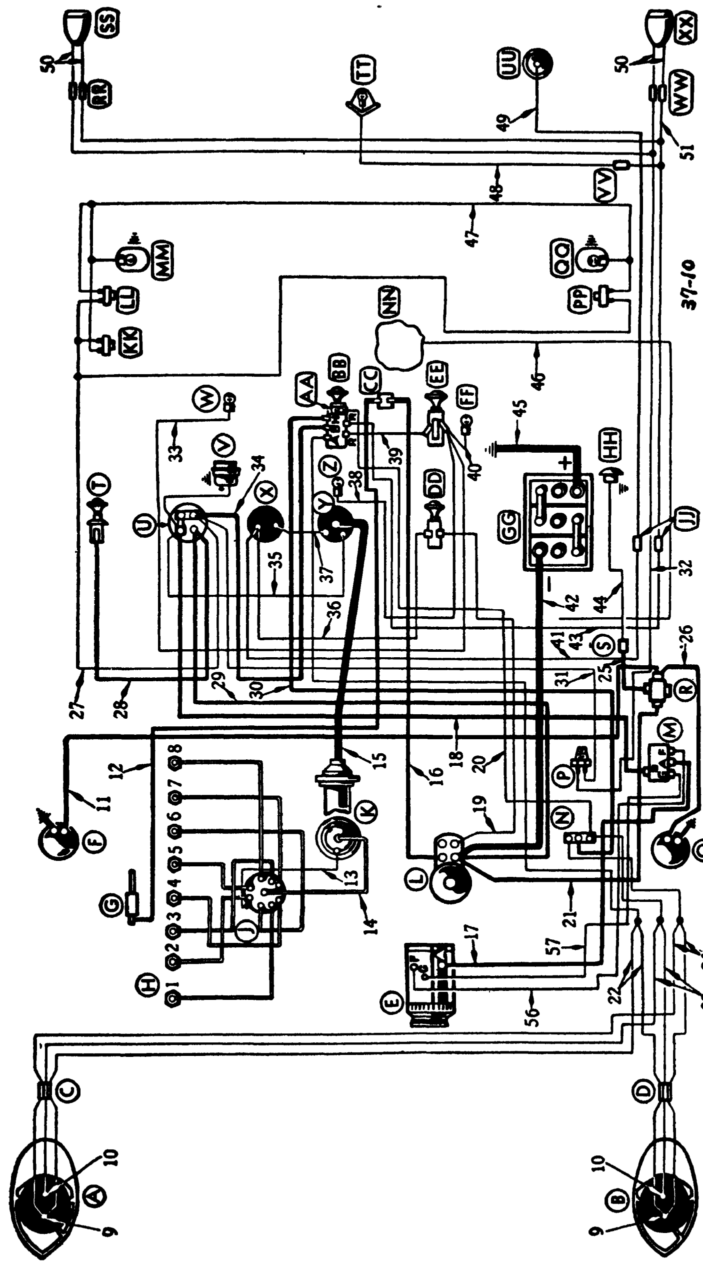
Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20 Qts.

Clutch Borg & Beck **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Hypoid Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
Front 19 13/16″ x 2″ x 13/64″ Clearance .006″ Heel, .012″ Toe
Rear 17 19/64″ x 2″ x 13/64″ Clearance .006″ Heel, .012″ Toe
Hand Transmission 16 15/16″ x 2″ x 5/32″ Clearance .025″
Lining Moulded **Diagram 37-9**



CHRYSLER WIRING DIAGRAM, 1937, MODEL AIRFLOW 8

Courtesy of Chrysler Corporation

Chrysler **Model Airflow 8** **Year 1937**

Battery Willard **Type** **Volts 6-8** **Amps. 136**
Frame Connection Positive

Lighting **Head Lights** 6-8 Volts
Stop Light 6-8 Volts **Tail** 6-8 Volts
Parking Lights 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 28 Amps. Hot **Speed** 1700 R.P.M., Arm.
Regulation Voltage and Current **Cut-in** 7 Volts, 820 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .013″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing

Engine **Bore** 3¼″ **Stroke** 4⅞″ **Taxable H.P.** 33.80
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3¼″ **Gap** Oil .007″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 44° A.B.C.
Intake Clearance Hot .006″ Operating, .011″ Timing
Exhaust Timing—Open 46° B.B.C. **Close** 4° A.T.C.
Exhaust Clearance Hot .010″ Operating, .014″ Timing

Carburetor Stromberg

Steering Caster 2° Camber ½° Toe-in 1/16″

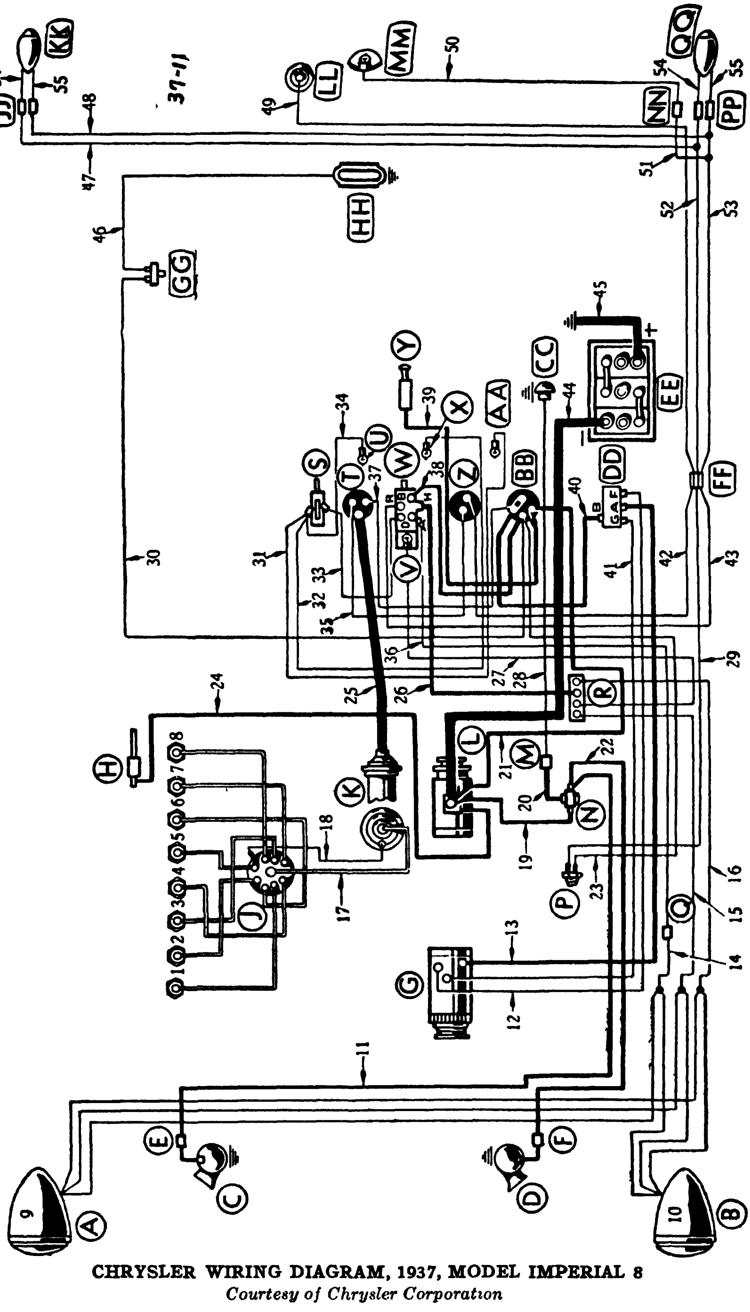
Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Clutch Borg & Beck **Facings** Woven 6⅛″ x 11″ x ⅛″ 2 Required

Gear Ratio Ring Gear 33 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
Front 24 27/32″ x 2″ x ¼″ Clearance .006″ Heel, .012″ Toe
Rear 24 27/32″ x 2″ x ¼″ Clearance .006″ Heel, .012″ Toe
Hand Transmission 21½″ x 2½″ x 3/16″ Clearance .025″
Lining Moulded Diagram 37-10



CHRYSLER WIRING DIAGRAM, 1937, MODEL IMPERIAL 8
Courtesy of Chrysler Corporation

Chrysler *Model Imperial 8* *Year 1937*

Battery Willard **Type** **Volts** 6-8 **Amps.** 119

Frame Connection Positive

Lighting **Head Lights** 6-8 Volts

Stop Light 6-8 Volts **Tail** 6-8 Volts

Parking Lights 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 28 Amps. Hot **Speed** 1700 R.P.M., Arm.

Regulation Voltage & Current **Cut-in** 7 Volts, 820 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .013″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing

Engine **Bore** 3¼″ **Stroke** 4⅛″ **Taxable H.P.** 33.8

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3¼″ **Gap** Oil .007″ Comp. .007″

Oiling—Type Gear Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 44° A.B.C.

Intake Clearance Hot .006″ Operating, .011″ Timing

Exhaust Timing—Open 46° B.B.C. **Close** 4° A.T.C.

Exhaust Clearance Hot .010″ Operating, .014″ Timing

Carburetor Stromberg

Steering Caster 1½° Camber ¼° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 22 Qts.

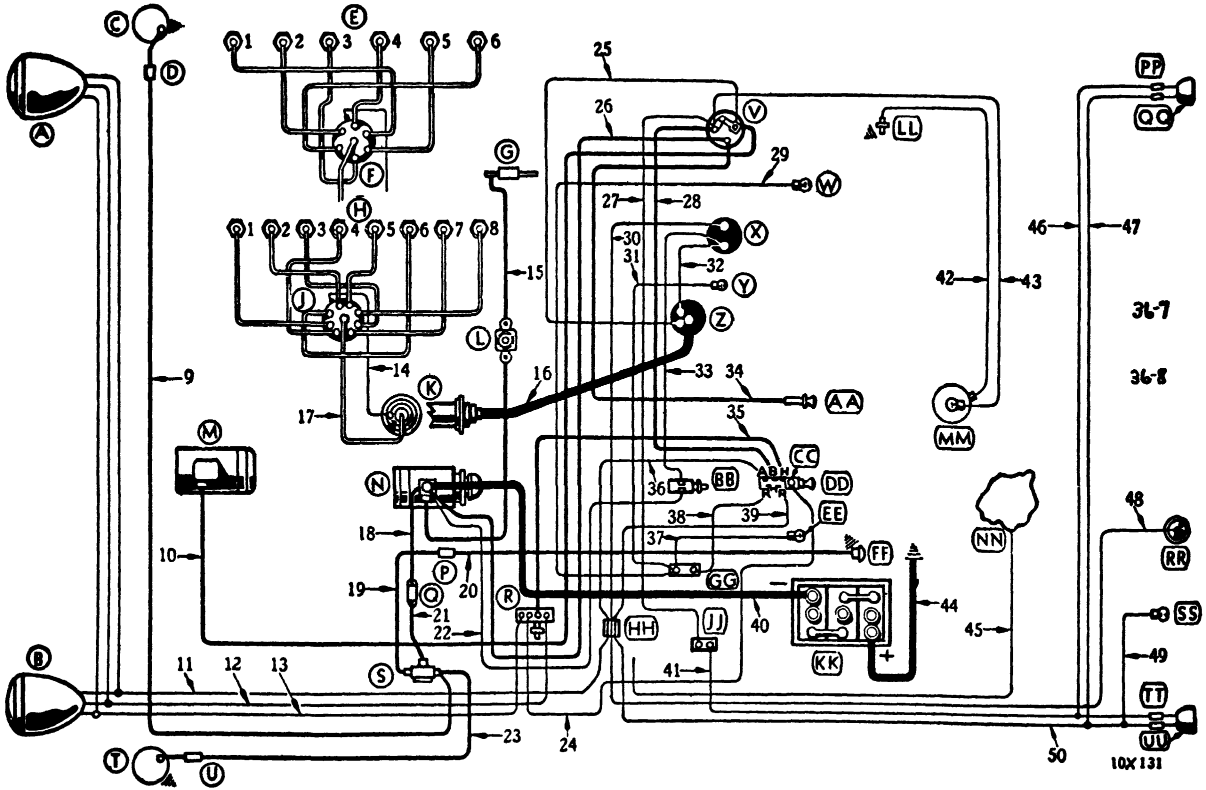
Clutch Borg & Beck **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Hypoid Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 22 5/32″ x 2″ x 13/64″ Clearance .006″ Heel, .012″ Toe
- **Rear** 22 5/32″ x 2″ x 13/64″ Clearance .006″ Heel, .012″ Toe
- **Hand** Transmission 21½″ x 2½″ x 3/16″ Clearance .025″

Lining Moulded Diagram 37-11



CHRYSLER WIRING DIAGRAM, 1936, MODEL, 6-CYLINDER

Courtesy of Chrysler Corporation

Chrysler **Model 6-Cylinder** **Year 1936**

Battery Willard **Type** **Volts** 6 **Amps.** 119
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 21-32 C.P.
Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite — **Max. Chg. Rate** 21 Amps. **Speed** 26 M.P.H.
Regulation 3rd Brush and Voltage Control — **Cut-in** 6.5-7.3 Volts
Contact Gap .015″-.025″

Ignition Auto-Lite — **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. **Gap** .007″-.015″
Oiling—Type Pump **Capacity** 6 Qts

Valves **Intake Timing—Open** T.D.C. **Close** 50° A.B.C.
Intake Clearance .006″ Hot, .010″ Cold
Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .008″ Hot, .010″ Cold

Carburetor Ball & Ball

Steering Caster 1½° Camber ¼° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 4¾ Gals.

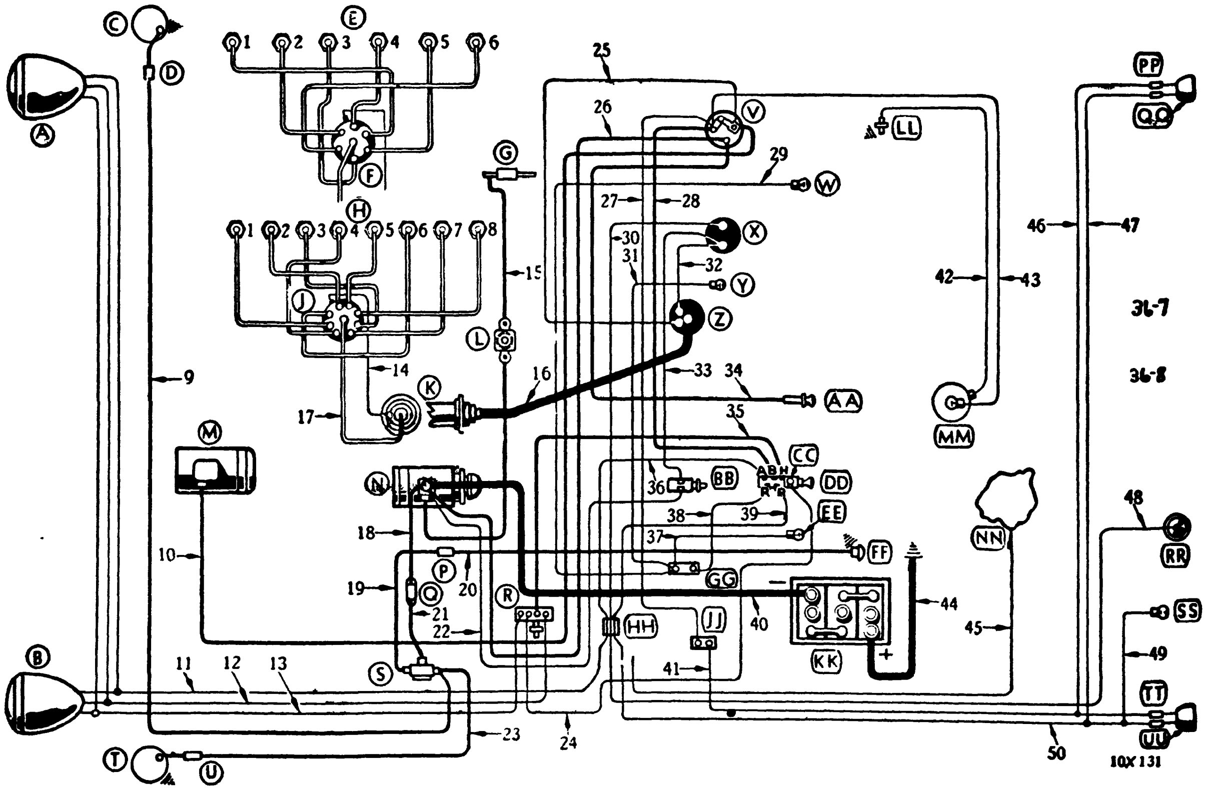
Clutch Borg & Beck **Facings** Woven 6¼″ x 9″ x ⅛″ 2 Required

Gear Ratio 4.1 to 1 Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 24 27/32″ x 2″ x ¼″ Clearance Toe .012″ Heel .006″
- **Rear** 24 27/32″ x 2″ x ¼″ Clearance Toe .012″ Heel .006″
- **Hand** Transmission 21 13/16″ x 2½″ x 3/16″ Clearance 1/32″

Lining Moulded **Diagram** 36-7



CHRYSLER WIRING DIAGRAM, 1936, MODEL, 8-CYLINDER

Courtesy of Chrysler Corporation

Chrysler   Model 8-Cylinder   Year 1936

Battery Willard **Type** **Volts** 6 **Amps.** 119

Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 21-32 C.P.

Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

Parking Lights 6-8, $1\frac{1}{2}$ C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 21 Amps. **Speed** 26 M.P.H.

Regulation 3rd Brush and Voltage Control **Cut-in** 6.5-7.3 Volts

Contact Gap .015"-.025"

Ignition Auto-Lite
Contact Breaker Gap .018"

Spark Plug—Size 14 M.M. **Gap** .025"

Firing Order 1-6-2-5-8-3-7-4

Timing T.D.C.

Engine **Bore** $3\frac{1}{4}$" **Stroke** $4\frac{1}{8}$" **Taxable H.P.** 33.80

Piston Ring—Width Oil 2—$\frac{5}{32}$" Comp. 2—$\frac{1}{8}$"
Diam. $3\frac{1}{4}$" **Gap** .007"-.015"

Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 44° A.B.C.

Intake Clearance .006" Hot, .012" Cold

Exhaust Timing—Open 46° B.B.C. **Close** 4° A.T.C.

Exhaust Clearance .008" Hot, .011" Cold

Carburetor Stromberg

Steering Caster $1\frac{1}{2}$° Camber $\frac{1}{4}$° Toe-in $\frac{1}{16}$"

Cooling System Centrifugal **Type** Pump **Capacity** $5\frac{1}{2}$ Gals.

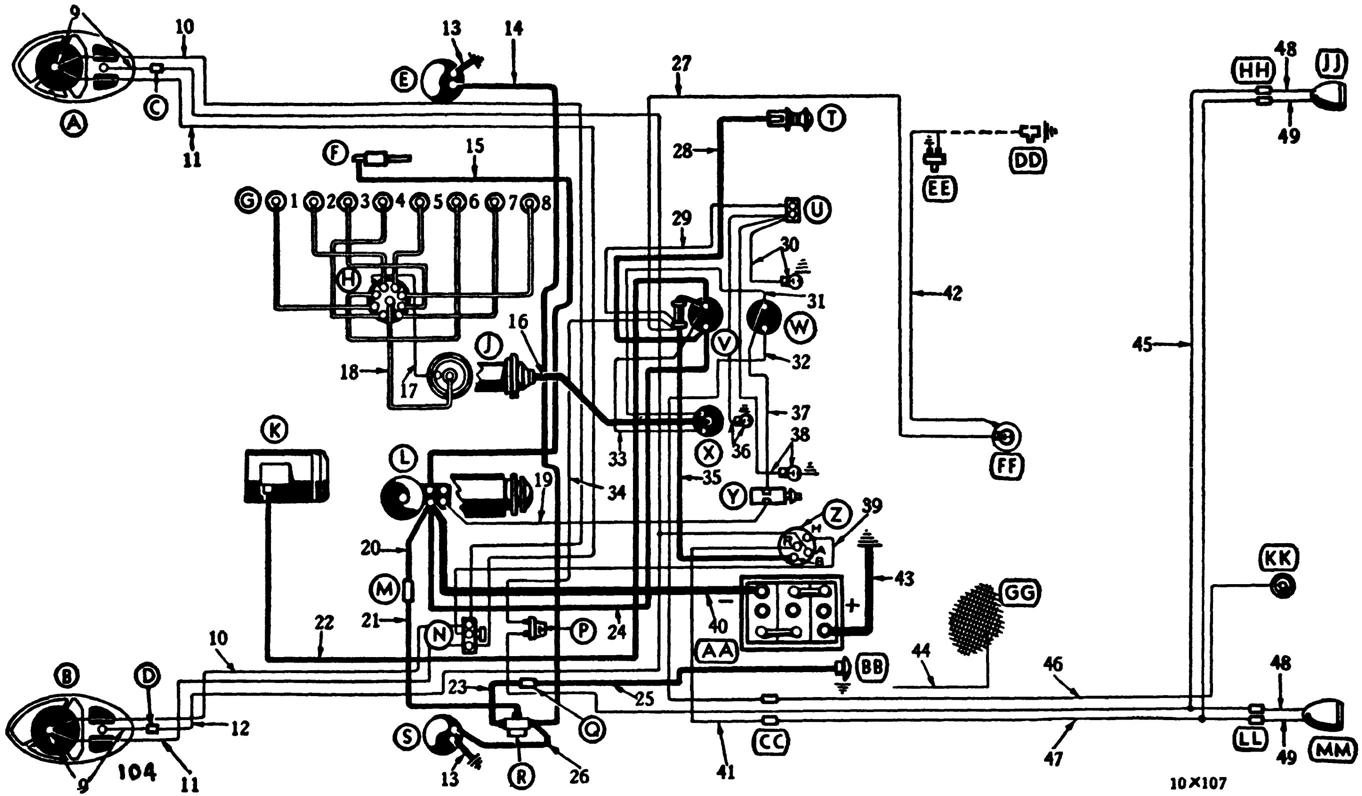
Clutch Borg & Beck **Facings** Woven $6\frac{1}{8}$" x $9\frac{7}{8}$" x $\frac{1}{8}$" 2 Required

Gear Ratio 4.1 to 1 Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** $22\frac{5}{32}$" x 2" x $\frac{3}{16}$" Clearance Toe .012" Heel .006"
- **Rear** $22\frac{5}{32}$" x 2" x $\frac{3}{16}$" Clearance Toe .012" Heel .006"
- **Hand** Transmission $18\frac{13}{32}$" x 2" x $\frac{5}{32}$" Clearance $\frac{1}{16}$"

Lining Moulded **Diagram** 36-8



CHRYSLER WIRING DIAGRAM, 1935, MODEL AIRFLOW 8

Courtesy of Chrysler Corporation

Chrysler **Model Airflow 8** **Year 1935**

Battery Willard **Type** **Volts** 6 **Amps.** 136

Frame Connection

Lighting Mazda 2320-C **Head Lights** 6-8, 21-32 C.P.

Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-3-21 C.P.

Mazda 55 **Side Lights** 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator **Max. Chg. Rate** 21 Amps. **Speed**

Regulation 3rd Brush **Cut-in** 6.5-7.3 Volts

Relay Air Gap **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing

Engine **Bore** 3¼″ **Stroke** 4⅞″ **Taxable H.P.** 33.80

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″

Diam. 3¼″ **Gap** .007″ on All

Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 44° A.B.C.

Intake Clearance .006″ Hot

Exhaust Timing—Open 46° B.B.C. **Close** 4° A.T.C.

Exhaust Clearance .008″ Hot

Carburetor Stromberg

Steering Caster ½° Camber 2° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 4¾ Gals.

Clutch Borg & Beck **Facings** 6⅛″ x 11″ x .133″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Hydraulic Lockheed

- **Front** 24 7/32″ x 2″ x ¼″ Clearance Heel .006″, Toe .012″
- **Rear** 24 7/32″ x 2″ x ¼″ Clearance Heel .006″, Toe .012″
- **Hand** Transmission 21 13/16″ x 2½″ x 5/16″ Clearance 1/16″

Lining Woven

Diagram 104

Chrysler Models 6-Cylinder, CA and CB Year 1934

Battery Willard **Type** WH-2-15 **Volts** 6 **Amps.** 119
Frame Connection Positive

Lighting Mazda A-1116 **Head Lights** 6-8, 32-21 C.P.
Mazda 63-1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 12-15 Amps. **Speed** 2900 R.P.M.
Regulation 3rd Brush **Cut-in** 6.6-6.8 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing Standard Head T.D.C. H.C. Head 3° A.T.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 1—3/16″ Comp. 3—⅛″
Diam. 3⅜″ **Gap** Oil .007″
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 50° A.B.C.
Intake Clearance .005″ Hot
Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .007″ Hot

Carburetor Stromberg Ball & Ball

Cooling System Centrifugal **Type** Pump **Capacity**

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x .133″ 2 Required

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 22 5/32″ x 2″ x 3/16″ Clearance Heel .006″ Toe .012″
- **Rear** 22 5/32″ x 2″ x 3/16″ Clearance Heel .006″ Toe .012″
- **Hand** Transmission 18 13/32″ x 2″ x 5/32″ Clearance 1/16″

Lining Moulded

Chrysler Models 8-Cylinder, Airflow CU and Imperial CV Year 1934

Battery Willard **Type** WH-4-17 **Volts** 6 **Amps.** 136
Frame Connection Positive

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 87 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 12-15 Amps. **Speed** 2900 R.P.M.
Regulation 3rd Brush **Cut-in** 6.6-6.8 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** CU, 3¼″; CV, 3½″; **Stroke** CU, 4½″; CV, 5″ **Taxable H.P.** 33.80
Piston Ring—Width Oil 1—3/16″ Comp. 3—⅛″ and 4—5/32″
Diam. as Bore **Gap** .007″ on All
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° A.T.C. **Close** 44° A.B.C.
Intake Clearance .005″
Exhaust Timing—Open 46° B.B.C. **Close** 4° A.T.C.
Exhaust Clearance .007″

Carburetor Stromberg

Cooling System Centrifugal **Type** Pump **Capacity**

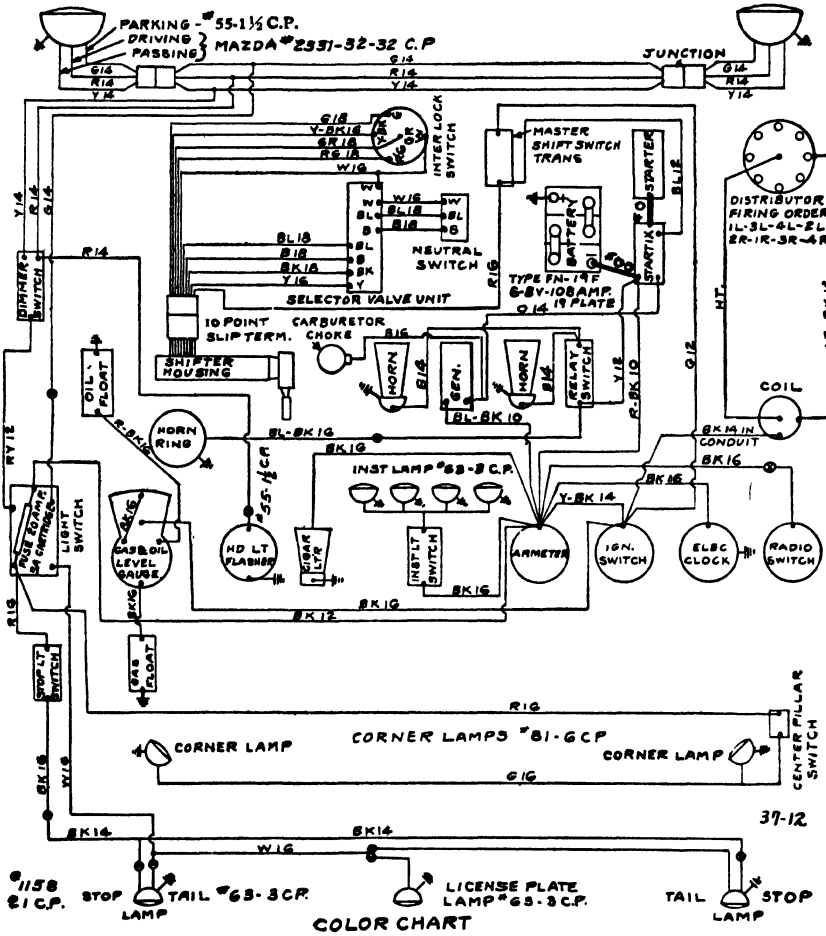
Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x .133″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
- **Front** CU, 22 13/16″ x 2″ x ¼″ Clearance Heel .006″ Toe .012″
  CV, 24 27/32″ x 2″ x ¼″ Clearance Heel .006″ Toe .012″
- **Rear** Same as Front
- **Hand** Transmission 18¼″ x 2½″ x ¼″ Clearance 1/16″

Lining Moulded



COLOR CHART

B—Brown
Y—Yellow
R—Red
W—White
BK—Black

O—Oak
BL—Blue
R-BK—Red & Black Tracer
BL-BK—Blue & Black Tracer
Y-BK—Yellow & Black Tracer

GR—Green & Red Tracer
RG—Red & Green Tracer
G—Green
RY—Red & Yellow Tracer

Douglas Junctions are indicated by × in a circle.

CORD WIRING DIAGRAM, 1937, 8-CYLINDER

Courtesy of Auburn Motor Company

Cord **Model 8-Cylinder** **Year 1937**

Battery U.S.L. **Type** FN-19F **Volts** 6-8 **Amps.** 108
Frame Connection Positive

Lighting **Head Lights** 6-8 Volts
Stop Light 6-8 Volts **Tail** 6-8 Volts
Parking Lights 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 23 Amps. Hot **Speed** 2800 R.P.M., Arm.
Regulation Current Control **Cut-in** 6.5 Volts, 720 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .017″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1L-3L-4L-2L-2R-1R-3R-4R
Timing 3° B.T.C.

Engine Bore 3½″ **Stroke** 3¾″ **Taxable H.P.** 39.20
Piston Ring—Width Oil 2—5/32″ Comp. 2—3/32″
Diam. 3½″ **Gap** Oil .009″ Comp. .009″
Oiling—Type Gear Pump **Capacity** 7 Qts. **Pressure** 40 Lbs. Max.

Valves **Intake Timing—Open** 7½° B.T.C. **Close** 37½° A.B.C.
Intake Clearance Hot .008″ Operating, 016″ Timing
Exhaust Timing—Open 50° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance Hot .008″ Operating, .016″ Timing

Carburetor Stromberg EE15

Steering Caster 1° Camber 1° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 28 Qts.

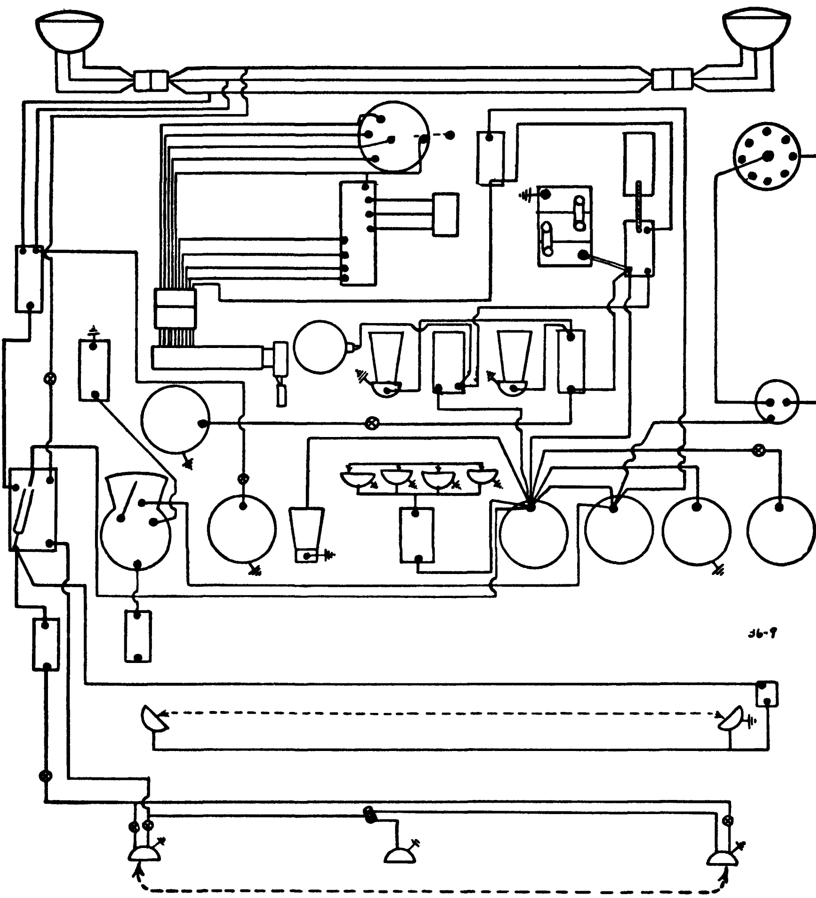
Clutch Long **Facings** Woven 6″ x 10″ x .137″ 2 Required

Gear Ratio Ring Gear 47 Pinion 10 Spiral Gears

Axle Own Tubular Front-Wheel Drive

Brakes Bendix Hydraulic
Front 24″ x 2¼″ x 3/16″ Clearance .010″
Rear 24″ x 2¼″ x 3/16″ Clearance .010″
Hand Rear Service

Lining Moulded and Woven **Diagram 37-12**



CORD WIRING DIAGRAM, 1936, MODEL, 8-CYLINDER
Courtesy of Auburn Motor Company

Cord **Model 8-Cylinder** **Year 1936**

Battery U.S.L. **Type** **Volts** 6 **Amps.** 125
Frame Connection

Lighting
Head Lights
Stop Light **Tail**
Parking Lights

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 20 Amps. Hot **Speed** 2500 R.P.M.
Regulation **Cut-in** 6.5 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1L-3L-4L-2L-2R-1R-3R-4R
Timing 3° B.T.C. Retard

Engine **Bore** 3½″ **Stroke** 3¾″ **Taxable H.P.** 39.20
Piston Ring—Width Oil 1—⅛″, 1—3/16″ Comp. 3/32″
Diam. 3½″ **Gap** .014″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 7.5° B.T.C. **Close** 37.5° A.B.C.
Intake Clearance .010″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Stromberg

Steering

Cooling System Pump **Type** Centrifugal **Capacity** 28 Qts.

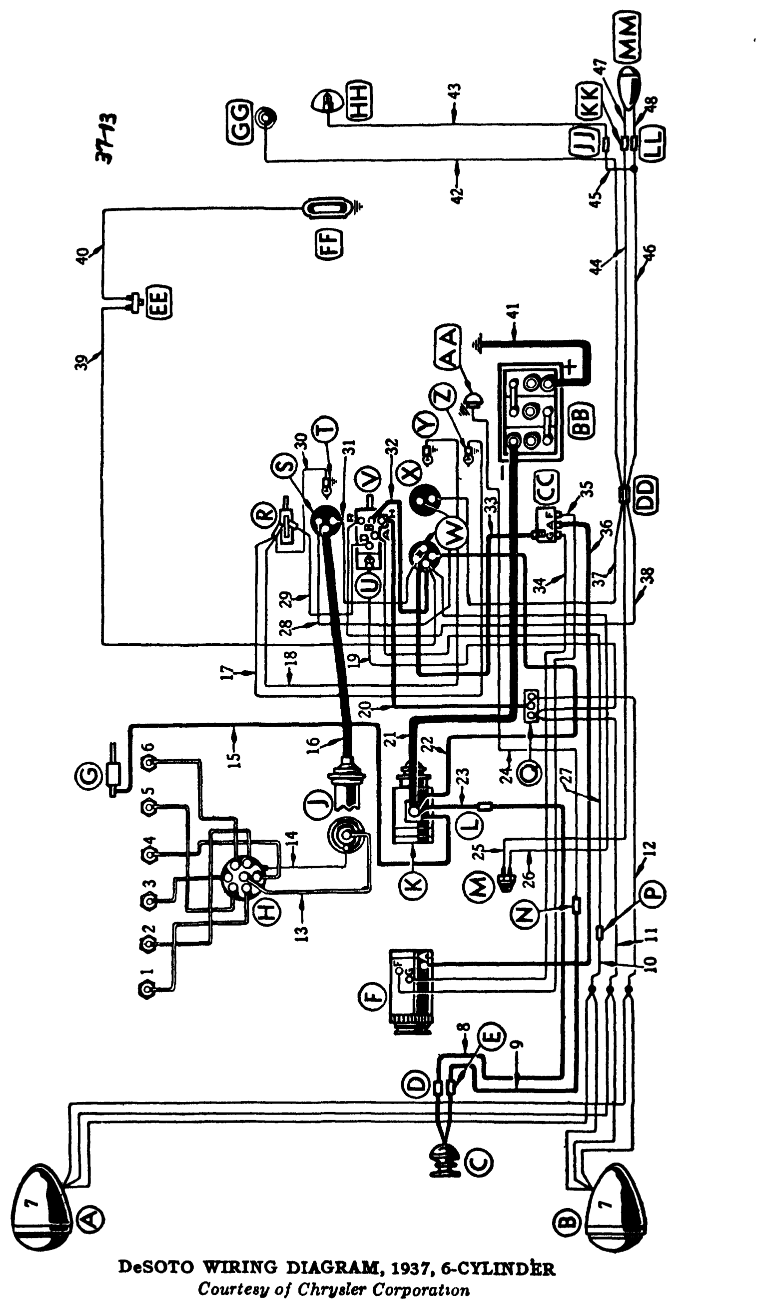
Clutch Long **Facings** Woven 6″ x 10″ x .137″ 2 Required

Gear Ratio 4.1 to 1

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
Front 19″ x 2¼″ x 3/16″
Rear 19″ x 2¼″ x 3/16″
Hand

Lining Moulded **Diagram** 36-9



DeSOTO WIRING DIAGRAM, 1937, 6-CYLINDER
Courtesy of Chrysler Corporation

De Soto Model 6-Cylinder Year 1937

Battery Willard **Type** **Volts** 6-8 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.
Mazda 1158 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 3 C.P.
Mazda 55 **Parking Lights** 6-8, $1\frac{1}{2}$ C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 22 Amps. Hot **Speed** 1900 R.P.M., Arm.
Regulation Voltage and Current **Cut-in** 7 Volts, 720 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 2° A.T.C.

Engine **Bore** $3\frac{3}{8}$″ **Stroke** $4\frac{1}{4}$″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—$\frac{5}{32}$″ Comp. 2—$\frac{1}{8}$″
Diam. $3\frac{3}{8}$″ **Gap** Oil .007″ Comp .007″
Oiling—Type Gear Pump **Capacity** 5 Qts

Valves **Intake Timing—Open** T.D.C. **Close** 50° A.B.C
Intake Clearance Hot .006″ Operating, 014″ Timing
Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance Hot .010″ Operating, .014″ Timing

Carburetor Carter BB

Steering Caster $1\frac{1}{2}$° Camber $\frac{1}{4}$° Toe-in $\frac{1}{16}$″

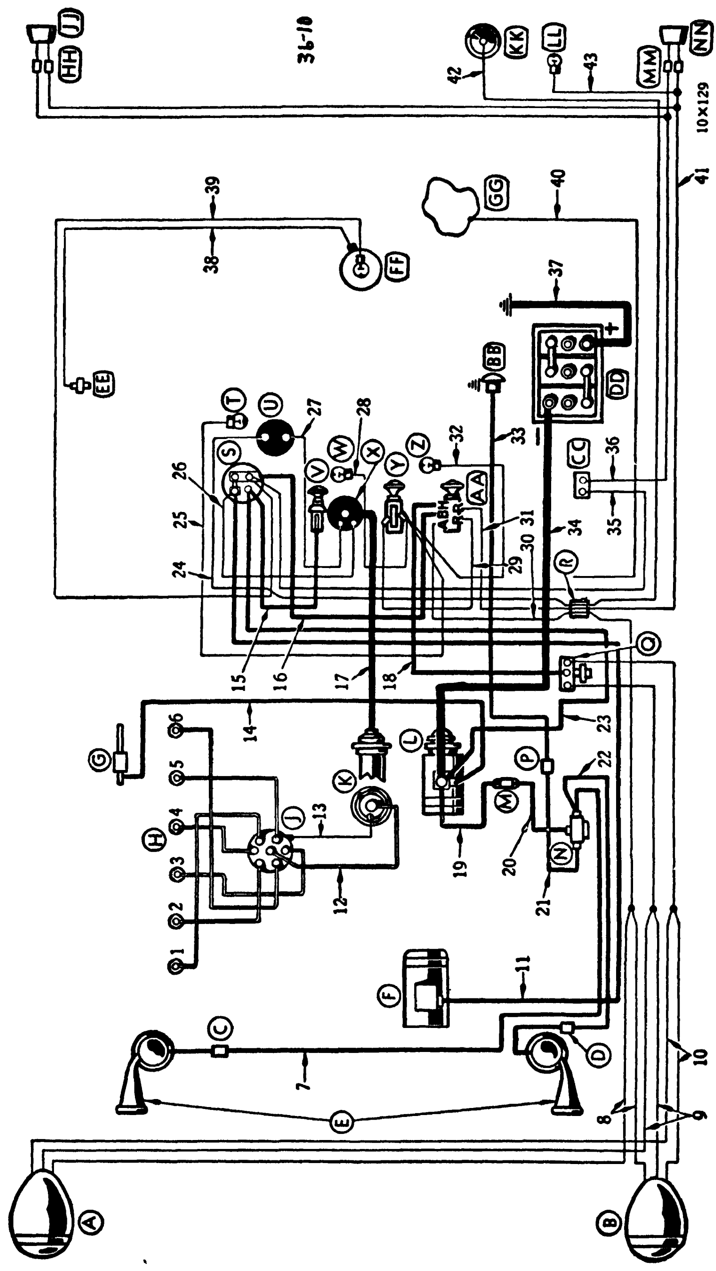
Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20 Qts.

Clutch Borg & Beck **Facings** Woven 6″ x 10″ x $\frac{1}{8}$″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Hypoid Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
Front $19\frac{15}{16}$″ x 2″ x $\frac{13}{64}$″ Clearance .006″ Heel, .012″ Toe
Rear $17\frac{13}{64}$″ x 2″ x $\frac{13}{64}$″ Clearance .006″ Heel, .012″ Toe
Hand Transmission $16\frac{15}{16}$″ x 2″ x $\frac{5}{32}$″ Clearance .025″
Lining Moulded **Diagram** 37-13



DE SOTO WIRING DIAGRAM, 1936, MODEL SI

Courtesy of Chrysler Corporation

De Soto — Model SI — Year 1936

Battery Willard **Type** **Volts 6** **Amps. 119**
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 21-32 C.P.
Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 1½″ C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 21 Amps. **Speed** 27 M.P.H.
Regulation 3rd Brush and Voltage Control **Cut-in** 6.5 Volts
Contact Gap .015″-.025″

Ignition Auto-Lite
Contact Breaker Gap .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C. Retarded

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** .007″-.015″
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 50° A.B.C
Intake Clearance .006″ Hot
Exhaust Timing—Open 48° B.D.C. **Close** 2° A.T.C.
Exhaust Clearance .008″ Exhaust

Carburetor Ball & Ball

Steering Caster 1½° Camber ¼° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 4¾ Gals.

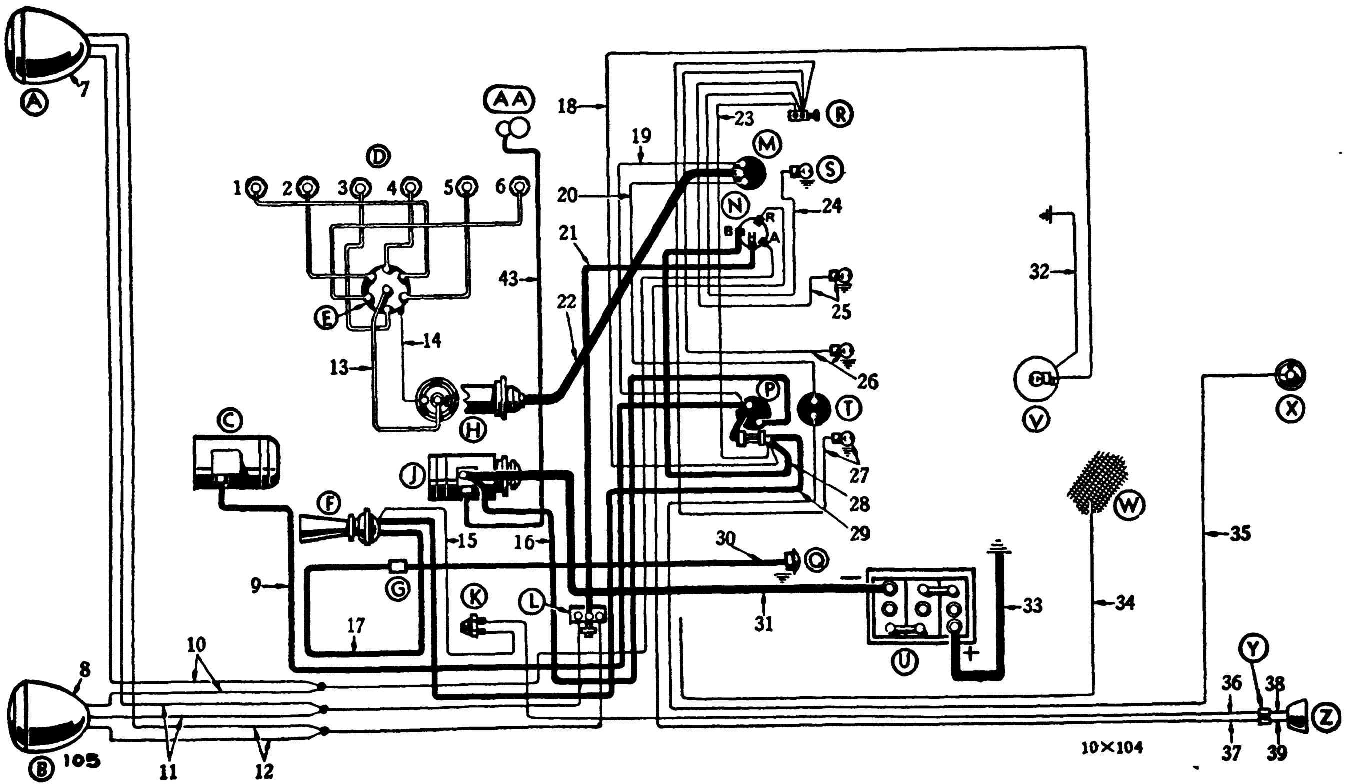
Clutch Borg & Beck **Facings** Woven 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio 4.1 to 1 Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front 22 5/32″ x 2″ x 3/16″ Clearance Toe .012″ Heel .006″
Rear 22 5/32″ x 2″ x 3/16″ Clearance Toe .012″ Heel .006″
Hand Transmission 24 3/16″ x 2″ x ¼″ Clearance 1/16″

Lining Moulded **Diagram** 36-10



DE SOTO WIRING DIAGRAM, 1935, MODEL AIRSTREAM 6

Courtesy of Chrysler Corporation

De Soto **Model Airstream 6** **Year 1935**

Battery **Willard** **Type** **Volts 6** **Amps.** 119

Frame Connection Positive

Lighting Mazda 2320-C **Head Lights** 6-8, 21-32 C.P.

Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-3-21 C.P.

Mazda 55 **Side Lights** 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator **Max. Chg. Rate** **Speed**

Regulation 3rd Brush **Cut-in** 6.5-7.3 Volts

Relay Air Gap **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 5° A.T.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 27.34

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″ **Diam.** 3⅜″ **Gap**

Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 50° A.B.C.

Intake Clearance .006″ Hot

Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C.

Exhaust Clearance .008″ Hot

Carburetor Ball & Ball

Steering Caster 1° Camber ¼° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 4¼ Gals.

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x .133″ 2 Required

Gear Ratio Ring Gear 35 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Hydraulic
- **Front** 19 13/16″ x 2″ x 3/16″ Clearance Heel .006″ Toe .012″
- **Rear** 19 13/16″ x 2″ x 3/16″ Clearance Heel .006″ Toe .012″
- **Hand** Transmission 18 13/32″ x 2″ x 3/16″

Lining Woven

Diagram 105

De Soto   Model, Airflow SE 6-Cylinder   Year 1934

Battery Willard **Type** WS-4-17 **Volts** 6 **Amps.** 115
Frame Connection Positive

Lighting
Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 12-15 Amps. **Speed** 2900 R.P.M.
Regulation 3rd Brush **Cut-in** 6.6-6.8 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition
Contact Breaker Gap .018″-.024″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 3° A.T.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 1—³⁄₁₆″ Comp. 3—⅛″
Diam. 3⅜″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 6 Qts.

Valves
Intake Timing—Open T.D.C. **Close** 50° A.B.C.
Intake Clearance .005″ Hot
Exhaust Timing—Open 40° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .007″ Hot

Carburetor Ball & Ball

Cooling System Centrifugal **Type** Pump **Capacity**

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x .133″ 2 Required

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 22⁵⁄₃₂″ x 2″ x ³⁄₁₆″ Clearance Heel .006″ Toe .012″
- **Rear** 22⁵⁄₃₂″ x 2″ x ³⁄₁₆″ Clearance Heel .006″ Toe .012″
- **Hand** Transmission 18¼″ x 2½″ x ¼″ Clearance ¹⁄₁₆″

Lining Moulded

De Soto **Model SD** **Year 1933**

Battery Willard **Type** WT-1-15 **Volts** 6 **Amps.** 90

Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 32-21 C.P.

Single Contact **Dash & Tail** 6-8, 3-2 C.P. **Stop** 21 C.P.

Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 12-14 Amps. **Speed** 2800-3000 R.P.M.

Regulation 3rd Brush, Thermo. **Cut-in** 6.75-7.5 Volts

Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** 018″-.024″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order—1-5-3-6-2-4

Timing Silver Dome 622-C 9° B.T.D.C.

Red Head 622-C 7° B.T.D.C.

Silver Dome 644-J At T.D.C.

Red Head 644-J 6° A.T.D.C.

Engine **Bore** 3-1/4″ **Stroke** 4-3/8″ **Taxable H.P.** 25.35

Piston Ring—Width 1-1/8″, 1-5/32″, 2-9/64″ **Diam.** 3-1/4″ **Gap** All Rings .007″

Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.

Intake Clearance .005″ Hot

Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.

Exhaust Clearance .007″ Hot

Carburetor Ball & Ball

Cooling System—Centrifugal **Type** Pump **Capacity** 4 Gals.

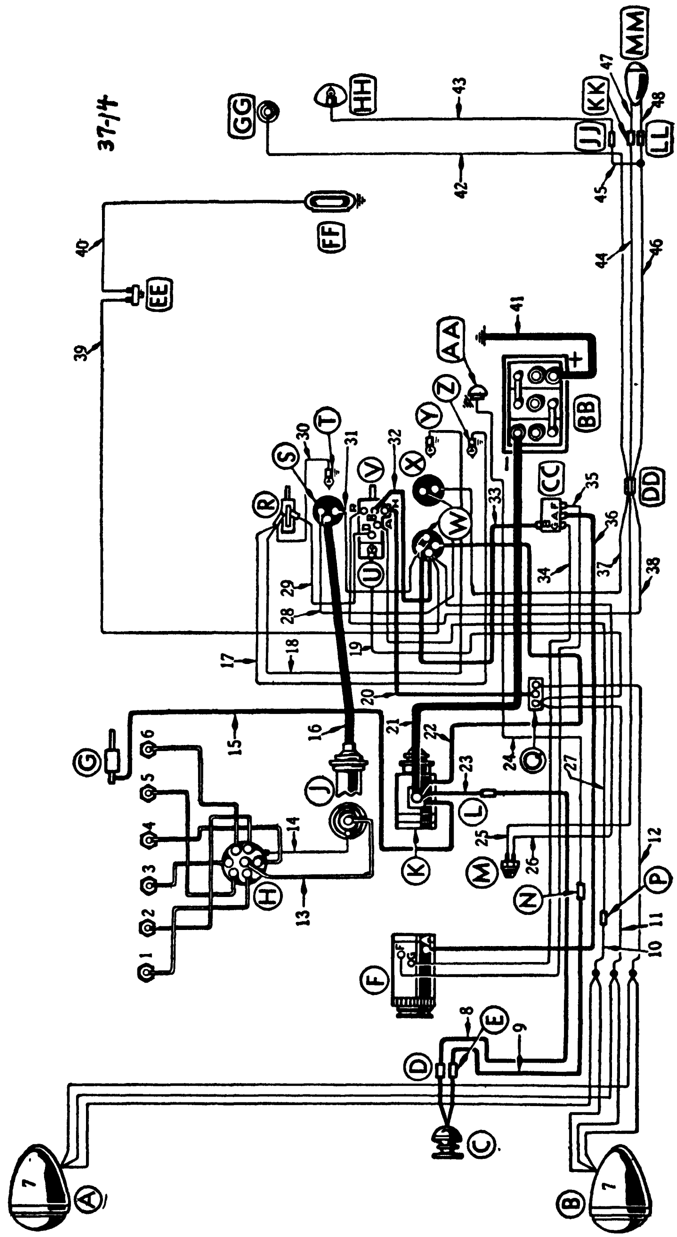
Clutch Borg & Beck **Facing**—Moulded 9-7/8″ x 6-3/4″ x 1/8″

Gear Ratio Ring Gear 35 Pinion 8 Spiral Gears

Axle Own Semi-Floating

				Heel	Toe
Brakes Lockheed Hydraulic	**Front**	20-7/32″ x 1-1/2″ x 3/16″	Clearance	.006″	.012″
	Rear	20-7/32″ x 1-1/2″ x 3/16″	Clearance	.006″	.012″
	Hand	Trans. 21-13/32″ x 2″ x 5/32″	Clearance 1/16″		

Lining—Moulded



DODGE WIRING DIAGRAM, 1937, 6-CYLINDER
Courtesy of Chrysler Corporation

Dodge Model 6-Cylinder Year 1937

Battery Willard **Type** **Volts** 6-8 **Amps.** 95

Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.

Mazda 1158 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

Mazda 55 **Parking Lights** 6-8, 1.5 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 22 Amps. Hot **Speed** 1900 R.P.M., Arm.

Regulation Voltage and Current **Cut-in** 7 Volts, 720 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 4° A.T.C.

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″

Diam. 3¼″ **Gap** Oil .007″ Comp. .007″

Oiling—Type Gear Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.

Intake Clearance Hot .006″ Operating, .011″ Timing

Exhaust Timing—Open 42° B.B.C. **Close** 8° A T.C.

Exhaust Clearance Hot .008″ Operating, .012″ Timing

Carburetor Stromberg

Steering Caster 2° Camber ½° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20 Qts.

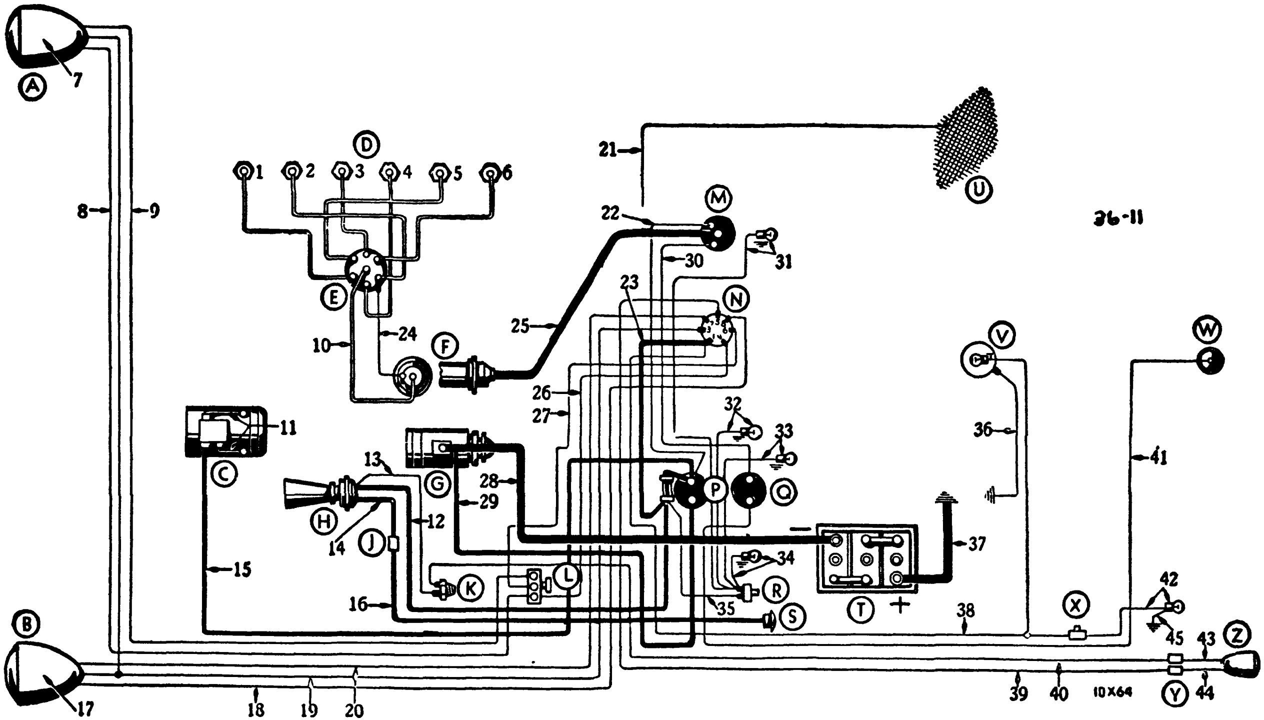
Clutch Borg & Beck **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Hypoid Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 19 13/16″ x 2″ x 13/64″ Clearance .006″ Heel, .012″ Toe
- **Rear** 17 19/64″ x 2″ x 13/64″ Clearance .006″ Heel, .012″ Toe
- **Hand** Transmission 16 15/16″ x 2″ x 5/32″ Clearance .025″

Lining Moulded **Diagram 37-14**



DODGE WIRING DIAGRAM, 1936, MODEL, 6-CYLINDER

Courtesy of Chrysler Corporation

Dodge **Model 6-Cylinder** **Year 1936**

Battery Willard **Type** **Volts 6** **Amps. 90**
Frame Connection Positive

Lighting Mazda 2320 **Head Lights** 6-8, 21-32 C.P.
Stop Light 6-8, 21 C.P. **Tail 6-8, 3 C.P.**
Parking Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite — **Max. Chg. Rate** 18 Amps. **Speed** 26 M.P.H.
Regulation 3rd Brush and Voltage Control **Cut-in** 7 Volts
Contact Gap .015″-.025″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing .002″ A.T.C. Piston Movement

Engine **Bore** $3\frac{1}{4}$″ **Stroke** $4\frac{3}{8}$″ **Taxable H.P.** 25.35
Piston Ring—**Width** Comp. 3 1—$\frac{1}{8}$″, 2—$\frac{9}{64}$″
Diam. $3\frac{1}{4}$″ **Gap** .007″-.015″
Oiling—**Type** Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg EXV2

Steering Caster $1\frac{1}{2}$° Camber $\frac{1}{2}$° Toe-in $\frac{1}{16}$″ to $\frac{1}{8}$″

Cooling System Centrifugal **Type** Pump **Capacity** $4\frac{5}{8}$ Gals.

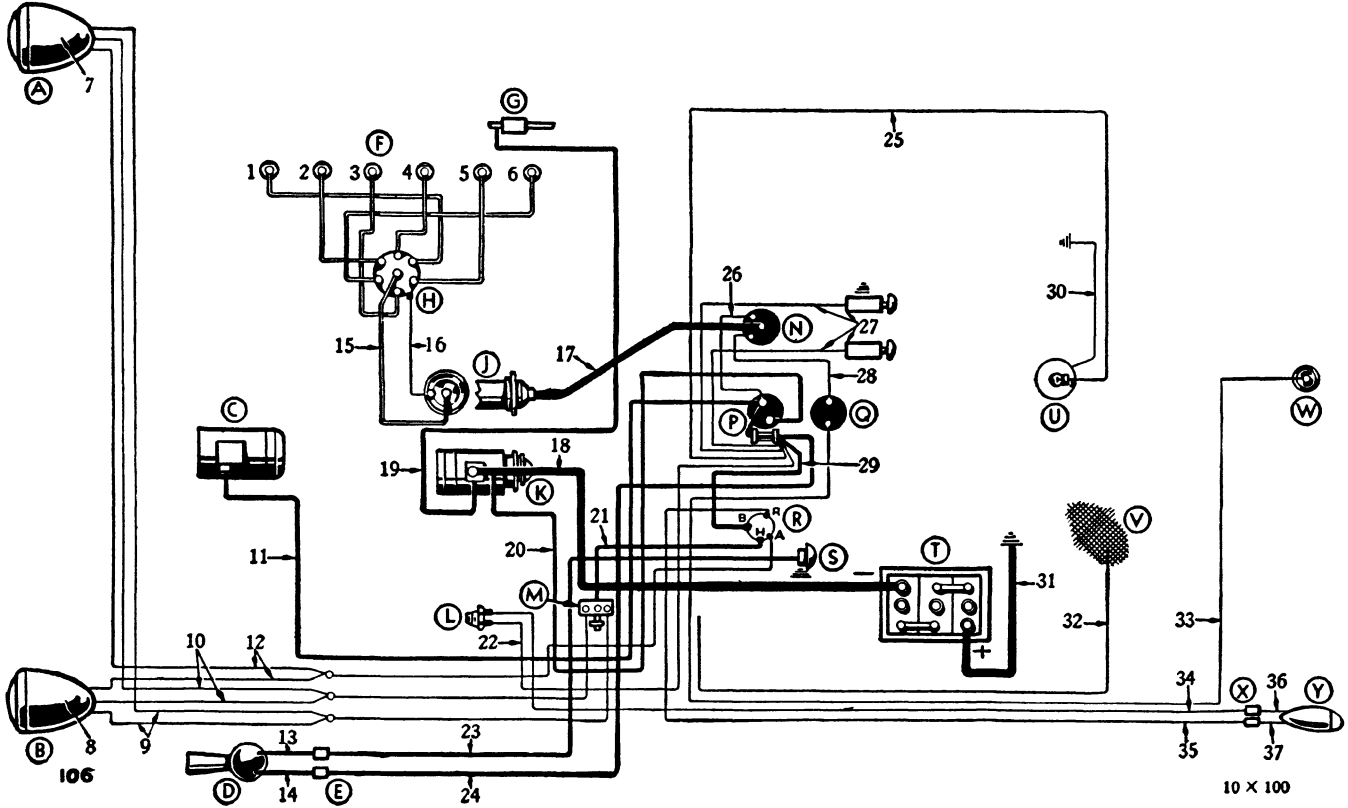
Clutch Borg & Beck **Facings** Moulded and Woven 1 of Each $6\frac{1}{8}$″ x $9\frac{7}{8}$″ x $\frac{1}{8}$″
$6\frac{1}{8}$″ x $9\frac{7}{8}$″ x .133″

Gear Ratio 4.11 to 1 Spiral Gears

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** $19\frac{13}{16}$″ x 2″ x $\frac{5}{16}$″ Clearance Toe .012″ Heel .006″
- **Rear** $19\frac{13}{16}$″ x 2″ x $\frac{5}{16}$″ Clearance Toe .012″ Heel .006″
- **Hand** Transmission $16\frac{1}{2}$″ x 3″ x $\frac{1}{4}$″ Clearance .025″

Lining Moulded **Diagram 36-11**



DODGE WIRING DIAGRAM, 1935

Courtesy of Chrysler Corporation

Dodge *Model* *Year 1935*

Battery Willard **Type** **Volts** 6 **Amps.** 90

Frame Connection Positive

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.

Mazda 55, 1158 **Dash, Tail and Stop** 6-8, 3-3-21 C.P.

Mazda 55 **Side Lights** 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator **Max. Chg. Rate** 21 Amps. **Speed**

Regulation 3rd Brush **Cut-in** 6.5-7.3 Volts

Relay Air Gap **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 3° A.T.C. Retard

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″

Diam. 3¼″ **Gap** .007″ on All

Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.T.C.

Intake Clearance .006″ Hot

Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.

Exhaust Clearance .008″ Hot

Carburetor Stromberg EX22

Steering Caster 2° Camber ½° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 4¾ Gals.

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x .133″ 2 Required

Gear Ratio Ring Gear 33 Pinion 8 Spiral Gears

Axle Own Semi-Floating

Brakes Hydraulic Lockheed
- **Front** 19 21/32″ x 2″ x 3/16″ Clearance Heel .005″ Toe .010″
- **Rear** 19 21/32″ x 2″ x 3/16″ Clearance Heel .005″ Toe .010″
- **Hand** Transmission 18 13/32″ x 2″ x 5/32″ Clearance 1/16″

Lining Moulded

Diagram 106

Dodge   Models 6-Cylinder, DR and DS   Year 1934

Battery Willard **Type** WT-1-15 **Volts** 6 **Amps.** 90
Frame Connection Positive

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 12-15 Amps **Speed** 2600 R.P.M.
Regulation 3rd Brush **Cut-in** 6.6-6.8 Volts
Relay Air Gap .038″ **Contact Gap** .008″-.013″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing Cast Iron Head 2° A.T.C. Aluminum Head 4° A.T.C

Engine **Bore** $3\frac{1}{4}$″ **Stroke** $4\frac{3}{8}$″ **Taxable H.P.** 25.32
Piston Ring—Width Oil 1—$\frac{5}{32}$″; Comp. 2—$\frac{9}{64}$″, 1—$\frac{1}{8}$″
Diam. $3\frac{1}{4}$″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .005″ Hot
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .007″ Hot

Carburetor Stromberg

Cooling System Centrifugal **Type** Pump **Capacity**

Clutch Borg & Beck **Facings** Moulded $6\frac{1}{8}$″ x $9\frac{7}{8}$″ x .133″ 2 Required

Gear Ratio Ring Gear 35 Pinion 8 Spiral Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
Front $15\frac{25}{32}$″ x 2″ x $\frac{3}{16}$″ Clearance Heel .006″ Toe .012″
Rear $15\frac{25}{32}$″ x 2″ x $\frac{3}{16}$″ Clearance Heel .006″ Toe .012″
Hand Transmission $18\frac{13}{32}$″ x 2″ x $\frac{5}{32}$″ Clearance $\frac{1}{16}$″

Lining Moulded

Dodge Model DO Year 1933

Battery Willard **Type** WS-4-17 **Volts** 6 **Amps.** 115
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 32-21 C.P.
Single Contact **Dash & Tail** 6-8, 3-2 C.P. **Stop** 21 C.P.
Single Contact **Side Lights** 6-8, 3 C. P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 12-14 Amps. **Speed** 2800-3000 R.P.M.
Regulation 3rd Brush, Thermo. **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .017″-.022″
Spark Plug—**Size** 14 M.M. **Gap** .025″
Firing Order—1-6-2-5-8-3-7-4
Timing Low Comp. 661-D 10° B.T.D.C. 661-S At-T.D.C.
High Comp. 661-D 7° B.T.D.C. 661-S 4° A.T.D.C.

Engine **Bore** 3-1/4″ **Stroke** 4-1/4″ **Taxable H.P.** 33.80
Piston Ring—**Width** 1-1/8, 1-5/32″, 2-9/64″ **Diam.** 3-1/4″ **Gap** All Rings .007″

Oiling—**Type** Pump **Capacity** 6 Qts.

Valves **Intake Timing**—**Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .005″ Hot
Exhaust Timing—**Open** 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .007″ Hot

Carburetor Ball & Ball Down Draft

Cooling System Centrifugal **Type** Pump **Capacity** 4-1/2 Gals.

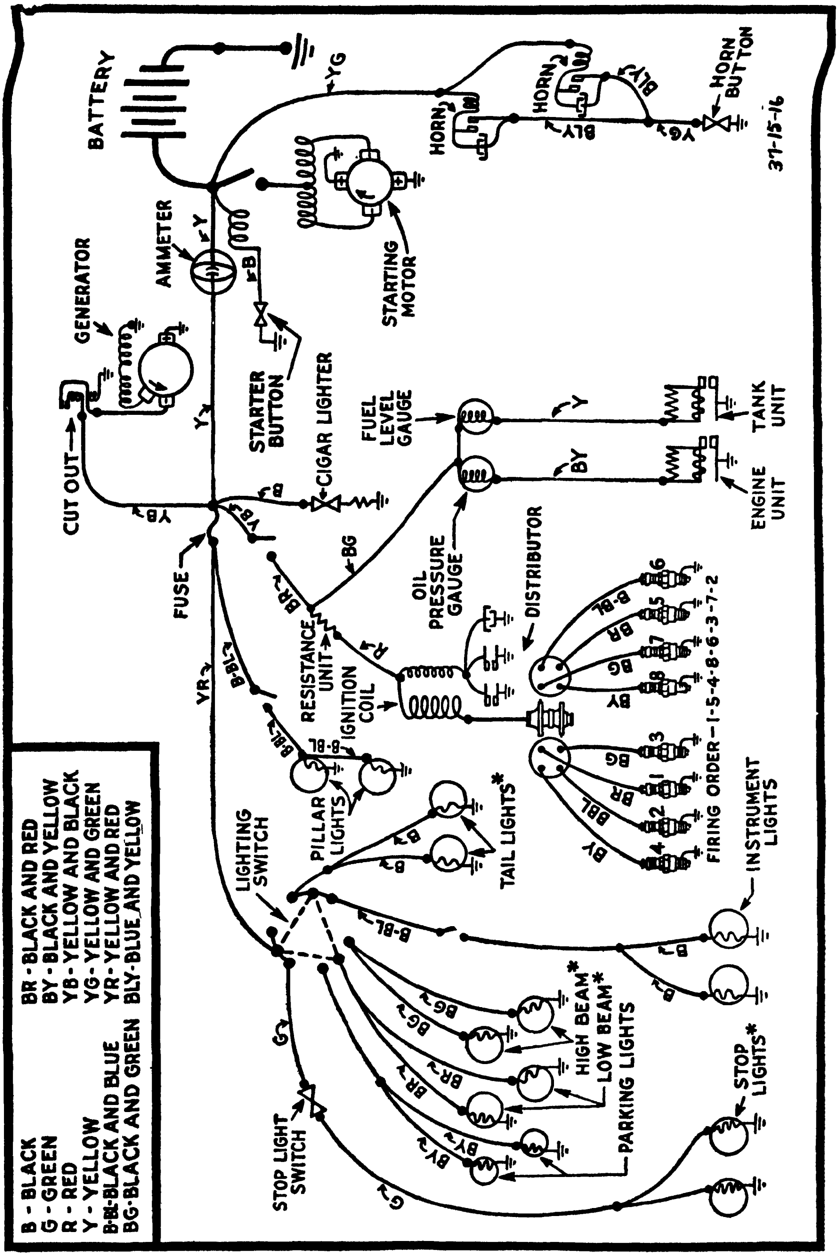
Clutch Borg & Beck **Facing**—Moulded 9-7/8″ x 6-3/4″ x 1/8″

Gear Ratio Ring Gear 43 Pinion 10 Spiral Gears

Axle Own Semi-Floating

					Heel	Toe
Brakes Lockheed Hydraulic	**Front**		23-9/16″ x 2″ x 3/16″	Clearance	.006″	.012″
	Rear		23-9/16″ x 2″ x 3/16″	Clearance	.006″	.012″
	Hand	Trans.	21-13/32″ x 2″ x 5/16″	Clearance 1/16″		

Lining—Moulded



FORD WIRING DIAGRAM, 1937, MODEL V-8-60
Courtesy of Ford Motor Company

Ford **Model V-8-60** **Year 1937**

Battery *Ford* ***Type*** ***Volts 6-8*** ***Amps. 100***

Frame Connection Positive

Lighting **Head Lights** 6-8, 32-32 C.P.

Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

Parking Lights 6-8, 3 C.P.

Starter and Generator

Generator **Max. Chg. Rate** 15 Amps. Hot **Speed** 2900 R.P.M.

Regulation Third Brush **Cut-in** 7 Volts, 10 M.P.H.

Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″ to .016″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-4-8-6-3-7-2

Timing 4° B.T.C.

Engine **Bore** 2.6″ **Stroke** 3.2″ **Taxable H.P.** 21.6

Piston Ring—Width Oil 1— 1545″ Comp. 2—.092″
Diam. 2.6″ **Gap** Oil .005″ Comp. .005″

Oiling—Type Gear Pump **Capacity** 4 Qts.
Pressure 30 Lbs. @ 3200 R.P.M.

Valves **Intake Timing—Open** 9° 30′ B.T.C. **Close** 54° 30′ A.B.C.

Intake Clearance Clearance Setting .0125″

Exhaust Timing—Open 57° 30′ B.B.C. **Close** 6° 30′ A.T.C.

Exhaust Clearance Clearance Setting .0125″

Carburetor Dual Down Draft

Steering Caster 6° Camber 1° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 3.8 Gals.

Clutch Plate **Facings** Asbestos Composition 8.5″ x .125″ 2 Required

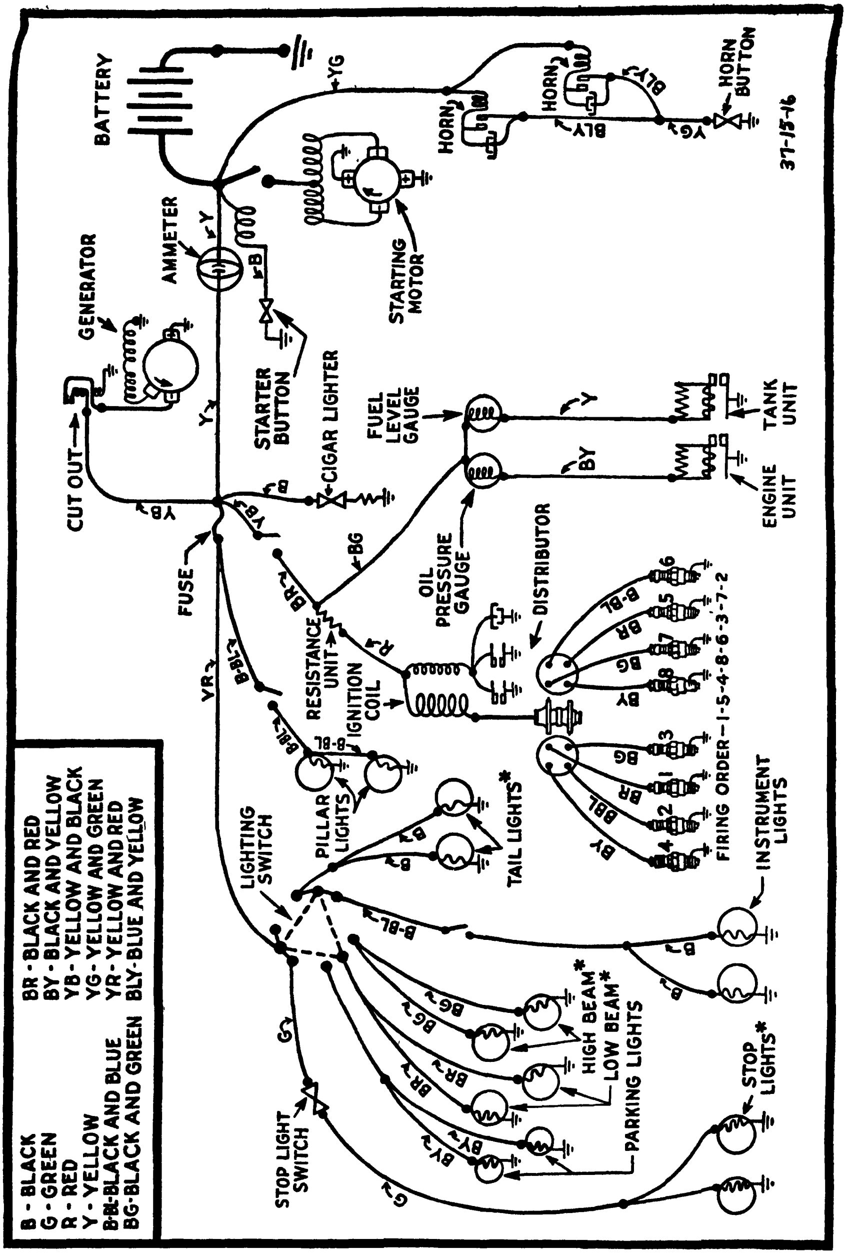
Gear Ratio 4.44 to 1 Spiral Gears

Axle Own ¾-Floating

Brakes Own Mechanical
- **Front** 13.25″ x 1.75″ x .185″
- **Rear** 13.25″ x 1.75″ x .185″
- **Hand** All Four Wheels

Lining Primary Brass Wire, Secondary Zinc Wire

Diagram 37-15



FORD WIRING DIAGRAM, 1937, MODEL V-8-85

Courtesy of Ford Motor Company

Ford **Model V-8-85** **Year 1937**

Battery Ford **Type** **Volts** 6-8 **Amps. 100**

Frame Connection Positive

Lighting **Head Lights** 6-8, 32-32 C.P.

Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

Parking Lights 6-8, 1.5 C.P.

Starter and Generator

Generator **Max. Chg. Rate** 15 Amps. Hot **Speed** 2900 R.P.M.

Regulation Third Brush **Cut-in** 7 Volts, 10 M.P.H.

Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″ to .016″

Spark Plug—Size 18 M.M. **Gap** .025″

Firing Order 1-5-4-8-6-3-7-2

Timing 4° B.T.C.

Engine **Bore** 3.062″ **Stroke** 3.75″ **Taxable H.P.** 30

Piston Ring—Width Oil 1—.1545″ Comp. 2—.0915″
Diam. 3.062″ **Gap** Oil .005″ Comp. .009″

Oiling—Type Gear Pump **Capacity** 5 Qts.

Pressure 30 Lbs. @ 2600 R.P.M.

Valves **Intake Timing—Open** 9° 30′ B.T.C. **Close** 54° 30′ A.B.C.

Intake Clearance Clearance Setting .0125″ to .0135″

Exhaust Timing—Open 57° 30′ B.B.C. **Close** 6° 30′ A.T.C.

Exhaust Clearance Clearance Setting .0125″ to .0135″

Carburetor Dual Down Draft

Steering Caster 6° Camber 1° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 5.5 Gals.

Clutch Plate **Facings** Asbestos Composition 9″ x .140″ 2 Required

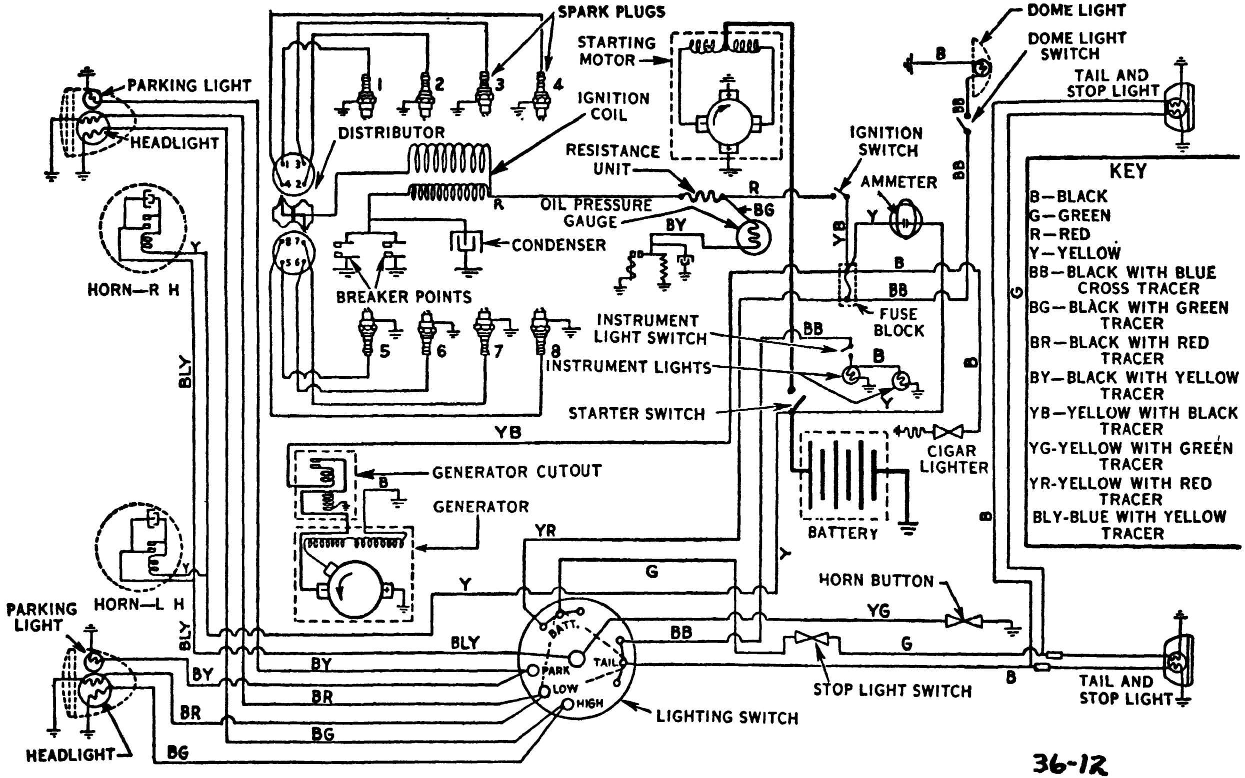
Gear Ratio 3.78 to 1 Spiral Gears

Axle Own ¾-Floating

Brakes Own Mechanical
- **Front** 13.25″ x 1.75″ x .185″
- **Rear** 13.25″ x 1.75″ x .185″
- **Hand** All Four Wheels

Lining Primary Brass Wire, Secondary Zinc Wire

Diagram 37-16



FORD WIRING DIAGRAM, 1936, MODEL V-8

Courtesy of Ford Motor Company

Ford Model V-8 Year 1936

Battery Ford **Type** **Volts 6** **Amps. 96**
Frame Connection Positive

Lighting Mazda 2330 **Head Lights** 6-8, 32-32 C.P.
Stop Light 6-8, 21 C.P. **Tail** 6-8, 2 C.P.
Parking Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 14 Amps. Hot **Speed** 25 M.P.H.
Regulation 3rd Brush **Cut-in**
Relay Air Gap .010″-.015″ **Contact Gap** .015″-.020″

Ignition Auto-Lite
Contact Breaker Gap .015″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-4-8-6-3-7-2
Timing 4° B.T.C.

Engine **Bore** 3 1/16″ **Stroke** 3 3/4″ **Taxable H.P.** 30
Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″
Diam. 3 1/16″ **Gap** Oil .005″ Comp. .009″
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 9 1/2° B.T.C. **Close** 54 1/2° A.B.C.
Intake Clearance .013″
Exhaust Timing—Open 57 1/2° B.B.C. **Close** 6 1/2° A.T.C.
Exhaust Clearance .013″

Carburetor Stromberg EE1

Steering Caster 7° Camber 2° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 20 Qts.

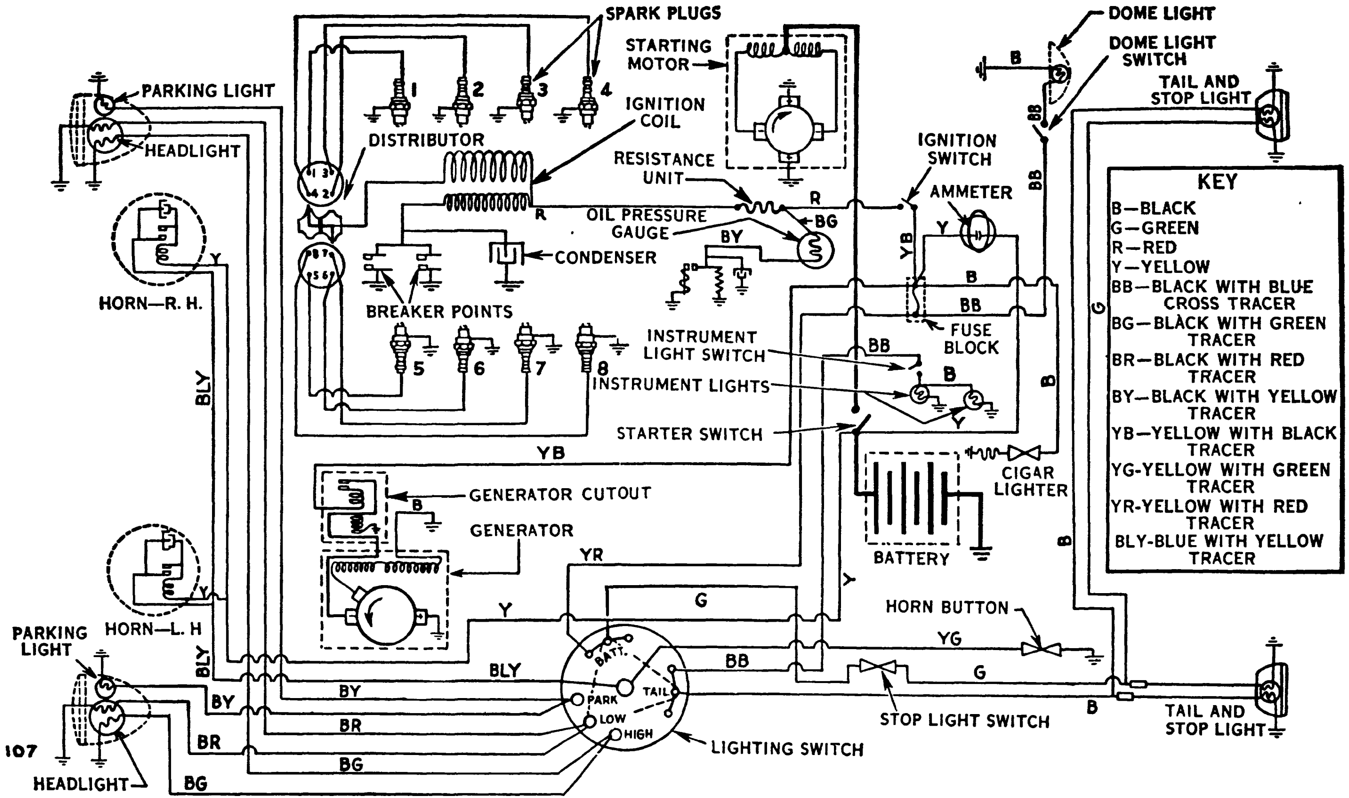
Clutch Long **Facings** Moulded 5 3/4″ x 9″ x .137″ 2 Required

Gear Ratio 4.1 to 1 Spiral Gears

Axle 3/4-Floating

Brakes Mechanical
Front 26 1/2″ x 1 3/4″ x 11/64″ Clearance .010″
Rear 26 1/2″ x 1 3/4″ x 11/64″ Clearance .010″
Hand 4 Wheels

Lining Semi-Moulded **Diagram 36-12**



FORD WIRING DIAGRAM, 1935, MODEL V-8

Courtesy of Ford Motor Company

Ford **Model V-8** **Year 1935**

Battery Ford **Type** **Volts** 6 **Amps.**
Frame Connection Positive

Lighting **Head Lights** 6-8, 32-32 C.P.
Dash and Tail
Side Lights

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 10 Amps. **Speed** 1600 R.P.M. Armature
Regulation 3rd Brush **Cut-in** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .012″-.014″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-4-8-6-3-7-2
Timing 4° B.T.C.

Engine **Bore** 3 1/16″ **Stroke** 3 3/4″ **Taxable H.P.** 30
Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″
Diam. 3 1/16″ **Gap** Oil .006″ Comp. .009″
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 9° 30′ B.T.C. **Close** 54° 30′ A.B.C.
Intake Clearance .0125″
Exhaust Timing—Open 57° 30′ B.B.C. **Close** 6° 30′ A.T.C.
Exhaust Clearance .0125″

Carburetor Stromberg

Steering Caster 7° Camber 2° Toe-in 1/16″

Cooling System Thermo-Syphon and Pump **Capacity** 20 Qts.

Clutch Long **Facings** Moulded 9″ x 5.76″ x .140″ 2 Required

Gear Ratio 4.11 to 1

Axle Own 3/4-Floating

Brakes Mechanical
- **Front** 26 1/2″ x 1 3/4″ x .185″
- **Rear** 26 1/2″ x 1 3/4″ x .185″
- **Hand** 4 Service

Lining Semi-Moulded

Diagram 107

Ford **Model V-8-112** **Year 1934**

Battery Ford **Type** 40-17 **Volts** 6 **Amps.** 96

Frame Connection Positive

Lighting Mazda 1000 **Head Lights** 6-8, 32-32 C.P.

Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.

Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator

Generator Hot **Max. Chg. Rate** 18 Amps. **Speed** 1875 R.P.M.

Regulation 3rd Brush **Cut-in** 7 Volts

Relay Air Gap .010″-.015″ **Contact Gap** .015″-.020″

Ignition **Contact Breaker Gap** .012″-.014″

Spark Plug—Size 18 MM. **Gap** .025″

Firing Order 1-5-4-8-6-3-7-2 See Diagram

Timing 4° B.T.C.

Engine **Bore** 3$\frac{1}{16}$″ **Stroke** 3¾″ **Taxable H.P.** 30 0

Piston Ring—Width Oil 1—$\frac{5}{32}$″ Comp. 2—$\frac{3}{16}$″
Diam. 3$\frac{1}{16}$″ **Gap** Oil .005″ Comp. .010″

Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 9½° B.T.C. **Close** 54½° A.B.C.

Intake Clearance .013″

Exhaust Timing—Open 57½° A.B.C. **Close** 6½° A.T.C.

Exhaust Clearance .020″

Carburetor Detroit

Steering Caster 8¾° Camber 2° Toe-in $\frac{1}{32}$″

Cooling System Centrifugal **Type** Pump **Capacity** 5½ Gals.

Clutch Long **Facings** Moulded 5¾″ x 9″ x .137″ 2 Required

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own ¾ Floating

Brakes Own Mechanical

- **Front** 31½″ x 1½″ x $\frac{3}{16}$″ Clearance .010″
- **Rear** 31½″ x 1½″ x $\frac{3}{16}$″ Clearance .010″
- **Hand** Rear Service

Lining Semi-Moulded

Ford **Model V-8-112** **Year 1933**

Battery Ford **Type** Ford **Volts** 6 **Amps.** 80
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 21-21 C.P.
Single Contact **Dash & Tail** 6-8, 3 C.P. **Stop** 21 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Ford **Ignition** Ford-Mallory

Generator **Max. Chg. Rate** 10.7 Amps. **Speed** 1600 R.P.M.
Regulation 3rd Brush **Cut-in** 8.5 M.P.H.
Relay Air Gap .010″-.015″ **Contact Gap** .015″-.020″

Ignition **Contact Breaker Gap** .012″-.014″ (on both sets)
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order—1-5-4-8-6-3-7-2
Timing 4° B.T.D.C.

Engine **Bore** 3-1/16″ **Stroke** 3-3/4″ **Taxable H.P.** 30

Piston Ring—Width 1-5/32″, 2-3/32″ **Diam.** 3-1/16″ **Gap** Oil .005″
Comp. .010″

Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 9-1/2° B.T.C. **Close** 54-1/2° A.B.C.
Intake Clearance .013″
Exhaust Timing—Open 57-1/2° B.B.C. **Close** 6-1/2° A T.C.
Exhaust Clearance .020″

Carburetor Detroit Lubricator Company

Cooling System Centrifugal **Type** Pump **Capacity** 5-1/2 Gals.

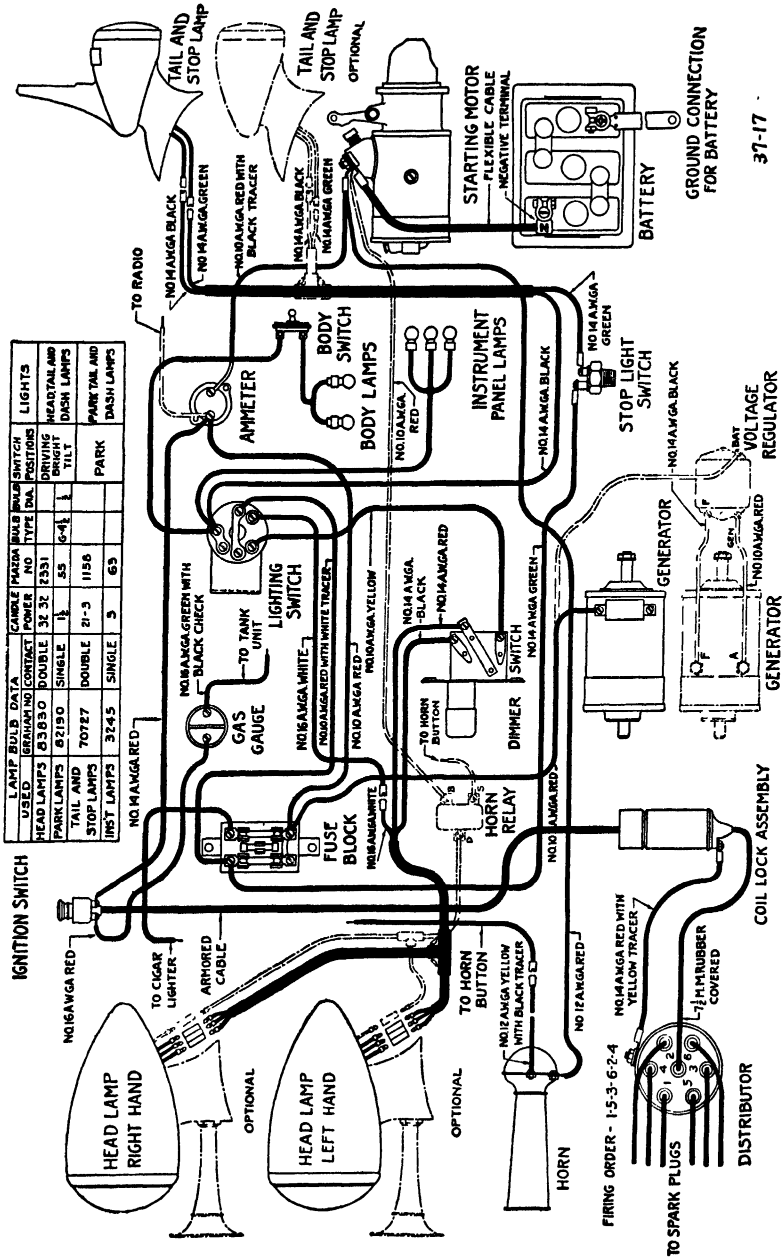
Clutch Long **Facing**—Moulded 9″ x 5-3/4″ x .137″

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own 3/4 Floating

Brakes Own Mechanical
- **Front** 31″ x 1-1/2″ x 3/16″ Clearance .010″
- **Rear** 31″ x 1-1/2″ x 3/16″
- **Hand** Rear Wheels

Lining—Semi-Moulded



LAMP BULB DATA								
USED	GRAHAM NO	CONTACT	CANDLE POWER	MAZDA NO	BULB TYPE	BULB DIA.	SWITCH POSITIONS	LIGHTS
HEAD LAMPS	83830	DOUBLE	32 32	2331			DRIVING BRIGHT TILT	HEAD, TAIL AND DASH LAMPS
PARK LAMPS	82190	SINGLE	1½	55	G-4½	½		
TAIL AND STOP LAMPS	70727	DOUBLE	21-3	1158			PARK	PARK TAIL AND DASH LAMPS
INS'T LAMPS	3245	SINGLE	3	63				

GRAHAM WIRING DIAGRAM, 1937, MODEL CAVALIER 85

Courtesy of Graham-Paige Motors Corporation

Graham *Model Cavalier 85* *Year 1937*

Battery Willard **Type** **Volts** 6-8 **Amps.** 90
Frame Connection Positive

Lighting **Head Lights** 6-8 Volts
Stop Light 6-8 Volts **Tail** 6-8 Volts
Parking Lights 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy — **Max. Chg. Rate** 15 Amps. Hot **Speed** 2400 R.P.M., Arm.
Regulation **Cut-in** 6-8 Volts
Relay Air Gap **Contact Gap**

Ignition Delco-Remy — **Contact Breaker Gap** .018″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 2° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4″ **Taxable H.P.** 25.35
Piston Ring—Width Oil, Upper 3/16″ Lower 5/32″ Comp. 2—3/32″
Diam. 3¼″ **Gap** Oil .007″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 5 Qts.
Pressure 40 Lbs. @ 30 M.P.H.

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 47½° A.B.C.
Intake Clearance Hot .010″ Operating, .012″ Timing
Exhaust Timing—Open 47½° B.B.C. **Close** 4½° A.T.C.
Exhaust Clearance Hot .010″ Operating, .012″ Timing

Carburetor Marvel B2SU

Steering Caster 4½° Camber 1° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 11 Qts.

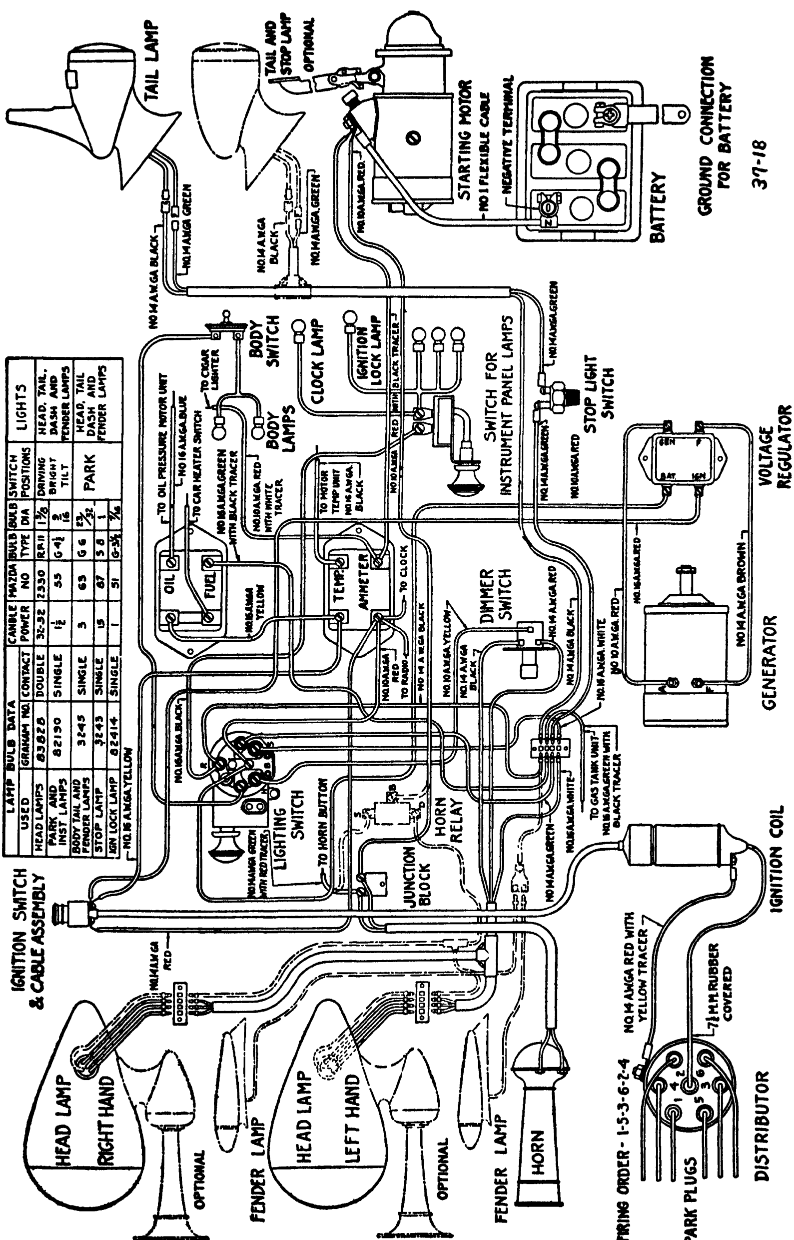
Clutch Illinois **Facings** Moulded 5⅛″ x 7⅞″ x ⅛″ 2 Required

Gear Ratio Ring Gear 50 Pinion 11 Spiral Gears

Axle Spicer Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 18″ x 1¾″ x 3/16″
- **Rear** 18″ x 1¾″ x 3/16″
- **Hand** Rear Service

Lining Moulded **Diagram 37-17**



LAMP BULB DATA USED	GRAHAM NO.	CONTACT	CANDLE POWER	MAZDA NO	BULB TYPE	BULB DIA	SWITCH POSITIONS	LIGHTS
HEAD LAMPS	83828	DOUBLE	32-32	2330	RP11	1 3/8	DRIVING BRIGHT TILT	HEAD, TAIL, DASH AND FENDER LAMPS
PARK AND INST LAMPS	82190	SINGLE	1½	55	G 4½	9/16		
BODY TAIL AND FENDER LAMPS	3245	SINGLE	3	63	G 6	23/32	PARK	HEAD, TAIL DASH AND FENDER LAMPS
STOP LAMP	3243	SINGLE	15	87	S 8	1		
IGN LOCK LAMP	82414	SINGLE	1	51	G-3½	7/16		

GRAHAM WIRING DIAGRAM, 1937, MODEL 116 SUPERCHARGED

Courtesy of Graham-Paige Motors Corporation

Graham **Model 116 Supercharged** **Year 1937**

Battery Willard **Type** **Volts** 6-8 **Amps.** 105

Frame Connection Positive

Lighting **Head Lights** 6-8 Volts

Stop Light 6-8 Volts **Tail** 6-8 Volts

Parking Lights 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 22 Amps. Hot **Speed** 2900 R.P.M., Arm.
Regulation Current Control **Cut-in** 7 Volts, 800 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .018″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 4° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4″ **Taxable H.P.** 25.35

Piston Ring—Width Oil, Upper 3⁄16″ Lower 5⁄32″ Comp. 2—3⁄32″
Diam. 3¼″ **Gap** Oil .007″ Comp. .007″

Oiling—Type Gear Pump **Capacity** 5 Qts.
Pressure 40 Lbs. @ 30 M.P.H.

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 47½° A.B.C.
Intake Clearance Hot .010″ Operating, .012″ Timing
Exhaust Timing—Open 47½° B.B.C. **Close** 4½° A.T.C.
Exhaust Clearance Hot .010″ Operating, .012″ Timing

Carburetor Marvel B3

Steering Caster 3° Camber 1° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 15 Qts.

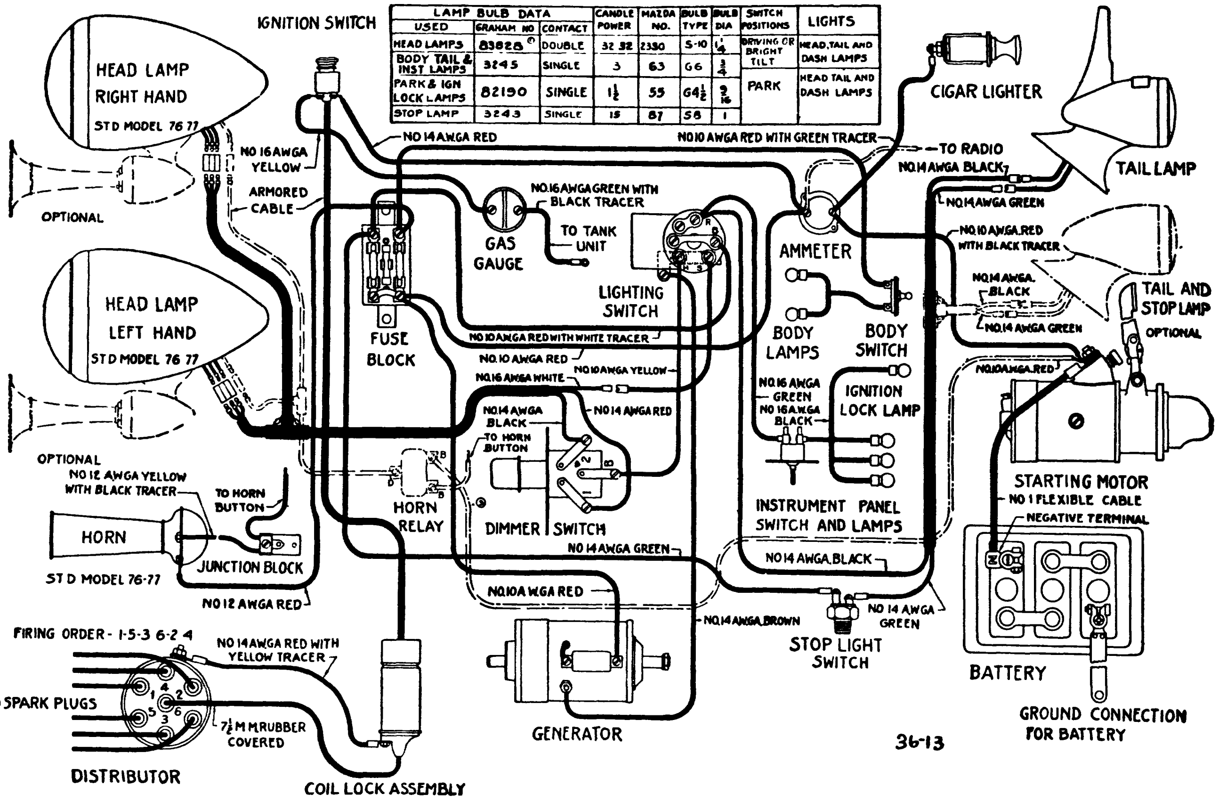
Clutch Long **Facings** Woven 5¾″ x 9″ x ⅛″ 2 Required

Gear Ratio Ring Gear 47 Pinion 11 Spiral Gears

Axle Spicer Semi-Floating

Brakes Lockheed Hydraulic
Front 18″ x 1¾″ x ¼″
Rear 18″ x 1¾″ x ¼″
Hand Transmission 17¾″ x 2″ x 5⁄32″ **Clearance** 1⁄32″

Lining Moulded **Diagram 37-18**



LAMP BULB DATA USED	GRAHAM NO	CONTACT	CANDLE POWER	MAZDA NO.	BULB TYPE	BULB DIA	SWITCH POSITIONS	LIGHTS
HEAD LAMPS	83828	DOUBLE	32 32	2330	S-10	1¼	DRIVING OR BRIGHT TILT	HEAD, TAIL AND DASH LAMPS
BODY TAIL & INST LAMPS	3245	SINGLE	3	63	G6	¾		
PARK & IGN LOCK LAMPS	82190	SINGLE	1½	55	G4½	9/16	PARK	HEAD TAIL AND DASH LAMPS
STOP LAMP	3243	SINGLE	15	87	S8	1		

GRAHAM CAVALIER WIRING DIAGRAM, 1936, SERIES 90 AND 110 SUPERCHARGED

Courtesy of Graham-Paige Motors Corporation

Graham Cavalier Models Series 90 and 110 Supercharged Year 1936

Battery Willard **Type** **Volts** 6 **Amps.** 100

Frame Connection Positive

Lighting Mazda 2330 **Head Lights** 6-8, 32-32 C.P.

Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.

Parking Lights 6-8, 1½ C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 14-21 Amps. **Speed** 2400 R.P.M.

Regulation **Cut-in** 7 Volts

Relay Air Gap **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .018″

Spark Plug– **Size** 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing T.D.C. Full Advance

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35

Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp. 2—⅛″ **Diam.** 3¼″ **Gap** .007″

Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 47½° A.B.C.

Intake Clearance .010″ Hot

Exhaust Timing—Open 47½° B.B.C. **Close** 4½° A.T.C.

Exhaust Clearance .010″ Hot

Carburetor Marvel B

Steering Caster 2½° Camber 1° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 15 Qts.

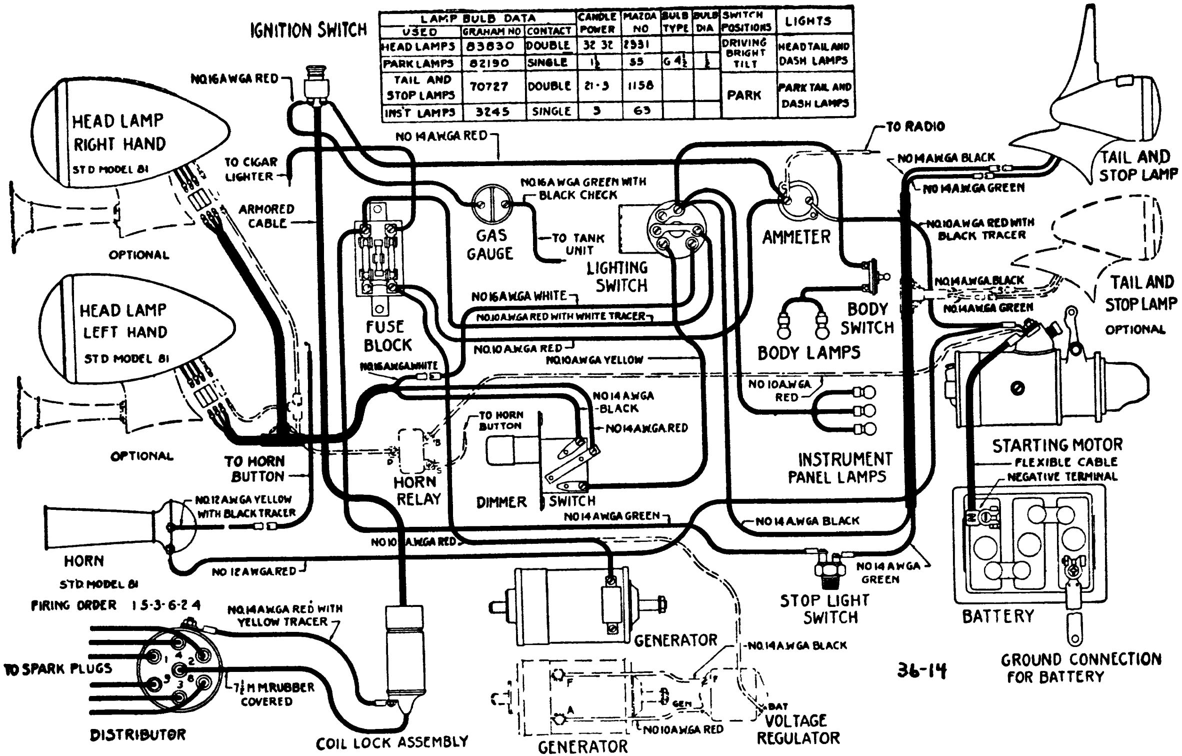
Clutch Illinois **Facings** Woven 5⅝″ x 9″ x ⅛″ 2 Required

Gear Ratio 4.2 to 1

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 23″ x 1¾″ x .255″ Clearance Heel .006″ Toe .010″
- **Rear** 23″ x 1¾″ x .255″ Clearance Heel .006″ Toe .010″
- **Hand** Trans. 17¾″ x 2″ x $\frac{5}{32}$″ Clearance $\frac{1}{32}$″

Lining Moulded Diagram 36-13



LAMP BULB DATA USED	GRAHAM NO	CONTACT	CANDLE POWER	MAZDA NO	BULB TYPE	BULB DIA	SWITCH POSITIONS	LIGHTS
HEAD LAMPS	83830	DOUBLE	32 32	2331			DRIVING BRIGHT TILT	HEAD TAIL AND DASH LAMPS
PARK LAMPS	82190	SINGLE	1½	55	G 4½	½		
TAIL AND STOP LAMPS	70727	DOUBLE	21-3	1158			PARK	PARK TAIL AND DASH LAMPS
INS'T LAMPS	3245	SINGLE	3	63				

GRAHAM CRUSADER WIRING DIAGRAM, 1936, SERIES 80

Courtesy of Graham-Paige Motors Corporation

Graham Crusader — Model Series 80 — Year 1936

Battery Willard **Type** **Volts** 6 **Amps.** 86
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.
Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6, 1½ C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 15 Amps. **Speed** 2400 R.P.M.
Regulation **Cut-in** 6-8 Volts
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .018″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 2° B.T.C. Full Advance

Engine **Bore** 3″ **Stroke** 4″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 1—3/16″ Comp. 2—⅛″
Diam. 3″ **Gap** .007″
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 42° A.B.C.
Intake Clearance .010″
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .010″

Carburetor Marvel B2SU

Steering Caster 2½° Camber 1° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 12 Qts.

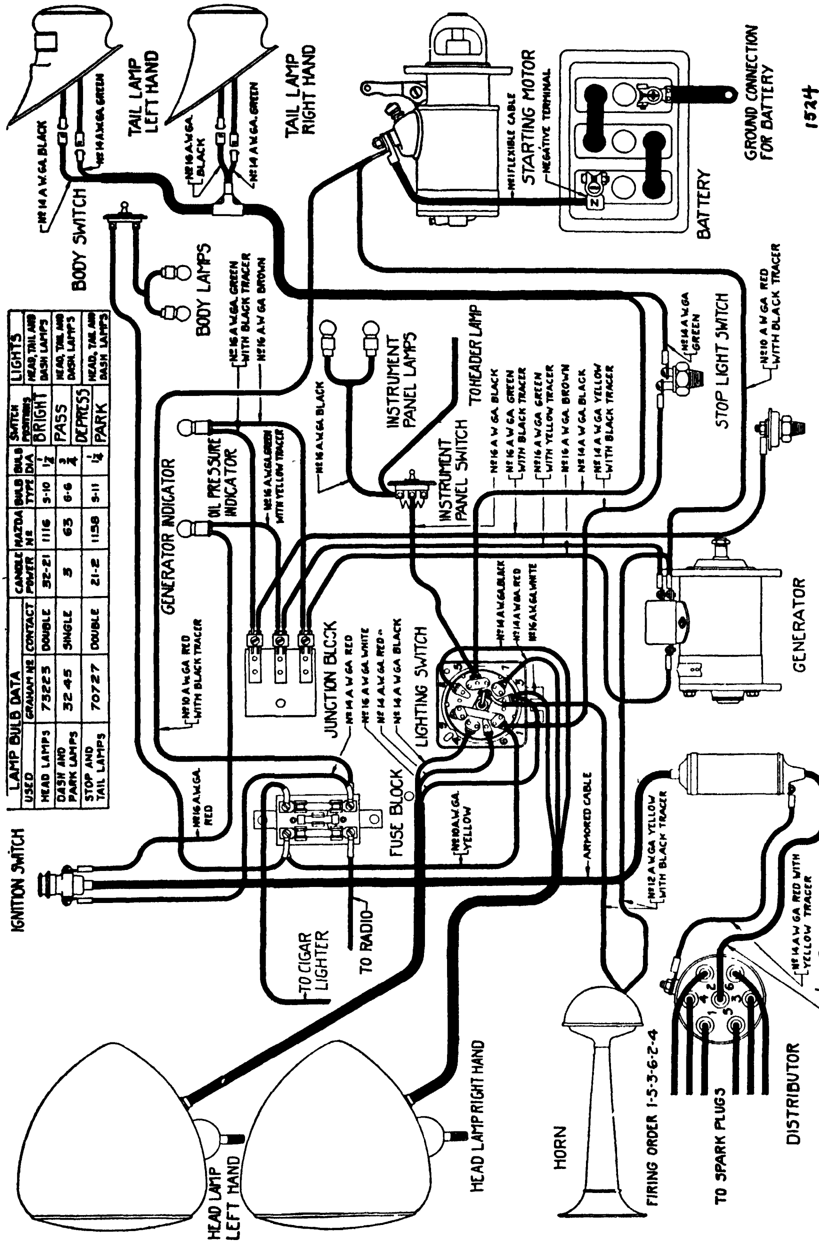
Clutch Illinois **Facings** Moulded 5⅛″ x 8⅞″ x ⅛″ 2 Required

Gear Ratio 4.53 to 1 Spiral Gears

Axle Semi-Floating

Brakes Own Hydraulic
Front 18″ x 1¾″ x .200″ Clearance .008″
Rear 18″ x 1¾″ x .200″ Clearance .008″
Hand Rear Service

Lining Moulded **Diagram** 36-14



GRAHAM WIRING DIAGRAM, 1934, MODELS STANDARD AND SPECIAL, 6-68

Courtesy of Graham-Paige Motors Corporation

Graham — Models Standard and Special, 6-68 — Year 1934

Battery Willard **Type** WS-1-13 **Volts** 6 **Amps.** 86
Frame Connection Positive

Lighting
Mazda 3230-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13-15 Amps. **Speed** 3000 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 7/8″ S.A.E. **Gap** .023″-.027″
Firing Order 1-5-3-6-2-4
Timing 3° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4½″ **Taxable H.P.** 25.35
Piston Ring—Width Oil 1—3/16″ Comp. 2—1/8″
Diam. 3¼″ **Gap** Oil .007″ Comp. .010″
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 40° A.B.C.
Intake Clearance .010″ Hot
Exhaust Timing—Open 40° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Detroit

Steering Caster 1½° Camber 1½° Toe-in 1/8″

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gals.

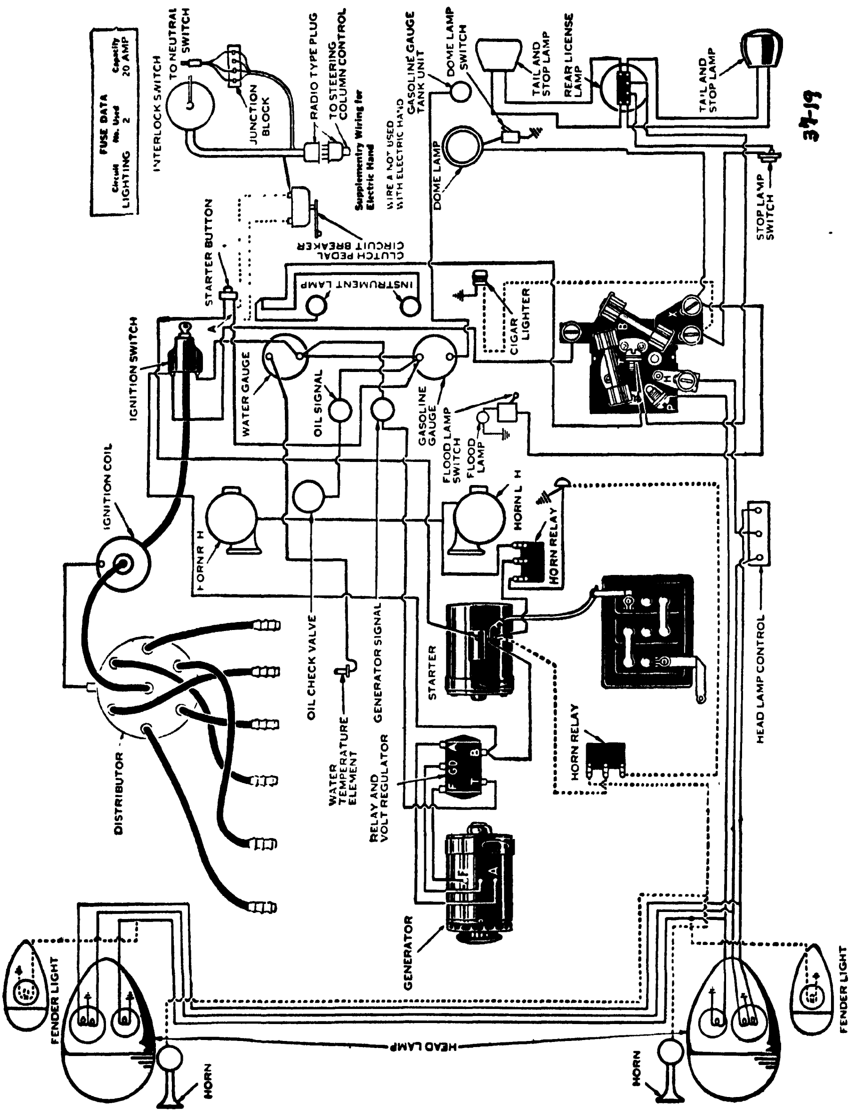
Clutch Long **Facing** Moulded 5½″ x 9¼″ x .137″ 2 Required

Gear Ratio Ring Gear 47 Pinion 11 Spiral Gears

Axle Spicer Semi-Floating

Brakes Lockheed Hydraulic
Front 1¾″ x 3/16″ Clearance Heel .006″ Toe .012″
Rear 1¾″ x 3/16″ Clearance Heel .006″ Toe .012″
Hand Transmission 18 9/16″ x 2″ x 5/32″ Clearance 1/32″
Lining Woven

Diagram 1524



HUDSON WIRING DIAGRAM, 1937, 6-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson **Model 6-Cylinder** **Year 1937**

Battery National **Type** **Volts** 6-8 **Amps.** 105

Frame Connection Positive

Lighting Mazda 2331 D.C. **Head Lights** 6-8, 32-32 C.P.

Mazda 1158 **Stop Light** 6-8 Volts **Tail** 6-8, 3-21 C.P., D.C.

Mazda 55 **Parking Lights** 6-8, 1 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite

Max. Chg. Rate 22 Amps. Hot **Speed** 2600 R.P.M., Arm.

Regulation Voltage and Current **Cut-in** 6.5 Volts, 750 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Auto-Lite

Contact Breaker Gap .020″

Spark Plug—Size 14 M.M. **Gap** .022″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.60

Piston Ring—Width Oil 2—$\frac{3}{16}$″ Comp. 2—$\frac{3}{32}$″
Diam. 3″ **Gap** Oil .009″ Comp. .009″

Oiling—Type Press. **Capacity** 5 Qts. **Pressure** 3 Lbs. Max.

Valves **Intake Timing—Open** 10$\frac{1}{2}$° B.T.C. **Close** 60° A.B.C

Intake Clearance Hot .008″

Exhaust Timing—Open 50° B.B.C. **Close** 18$\frac{1}{2}$° A.T.C.

Exhaust Clearance Hot .010″

Carburetor Carter 344S

Steering Caster 0° Camber 1° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20 Qts.

Clutch Own **Facings** Cork 5$\frac{3}{8}$″ x 8$\frac{5}{8}$″ x .203″

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

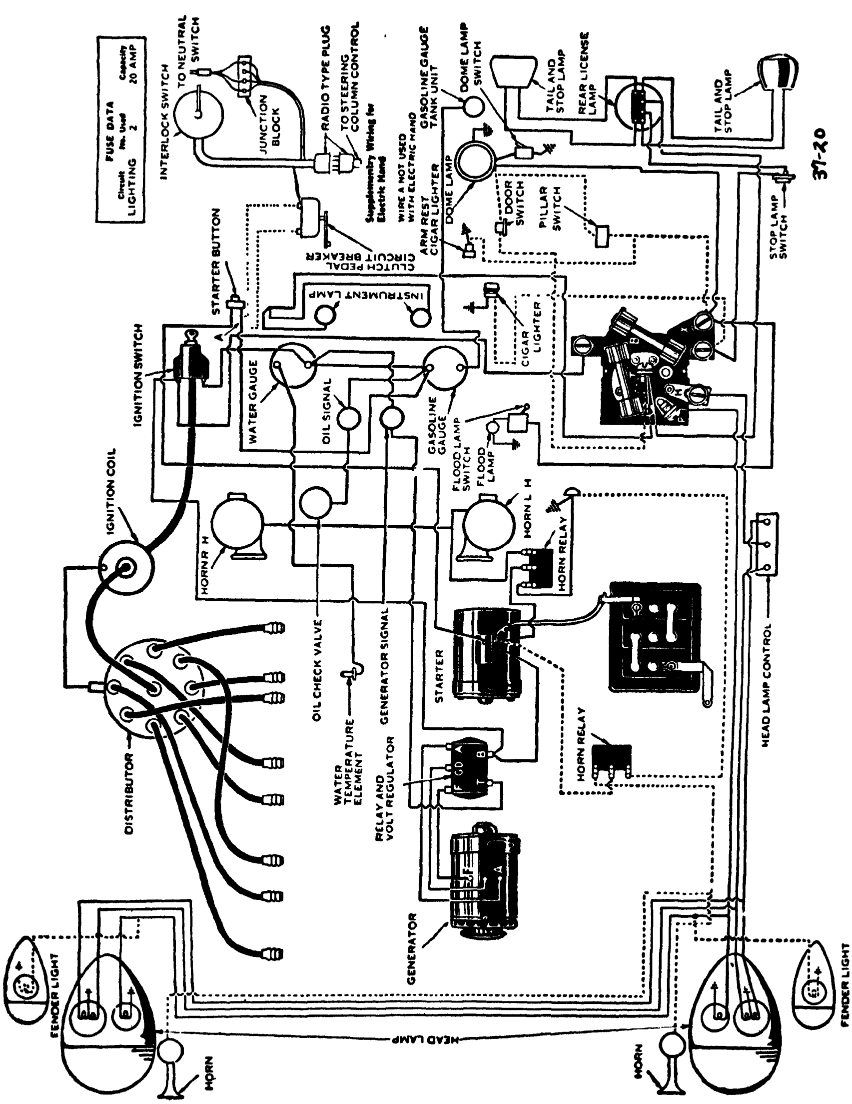
Brakes Bendix Hydraulic

Front 22$\frac{1}{8}$″ x 1$\frac{3}{4}$″ x $\frac{7}{32}$″ Clearance .010″

Rear 22$\frac{1}{8}$″ x 1$\frac{3}{4}$″ x $\frac{7}{32}$″ Clearance .010″

Hand Rear Service

Lining Moulded Diagram 37-19



HUDSON WIRING DIAGRAM, 1937, 8-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson Model 8-Cylinder Year 1937

Battery National **Type** **Volts** 6-8 **Amps.** 125
Frame Connection Positive

Lighting Mazda 2331 D.C. **Head Lights** 6-8, 32-32 C.P.
Mazda 1158 **Stop Light** 6-8 Volts **Tail** 6-8, 3-21 C.P., D.C.
Mazda 55 **Parking Lights** 6-8, 1 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 22 Amps. Hot **Speed** 2600 R.P.M., Arm.
Regulation Voltage and Current **Cut-in** 7 Volts, 750 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .013″
Spark Plug—Size 14 M.M. **Gap** .022″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 4½″ **Taxable H.P.** 28.80
Piston Ring—Width Oil 2—3/16″ Comp. 2—3/32″
Diam. 3″ **Gap** Oil .009″ Comp. .009″
Oiling—Type Press. **Capacity** 7 Qts. **Pressure** 3 Lbs. Max.

Valves **Intake Timing—Open** 10½° B.T.C. **Close** 60° A.B.C.
Intake Clearance Hot .008″
Exhaust Timing—Open 50° B.B.C. **Close** 18½° A.T.C.
Exhaust Clearance Hot .010″

Carburetor Carter 344S

Steering Caster 0° Camber 1° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20 Qts.

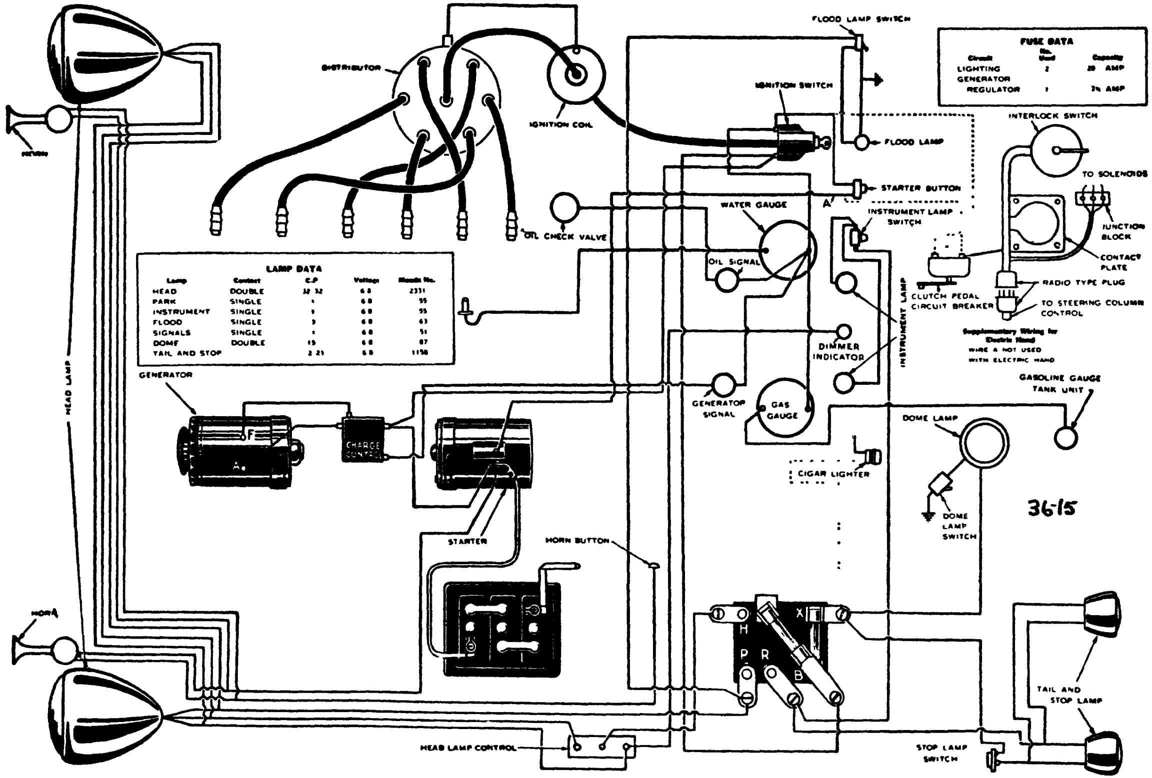
Clutch Own **Facings** Cork 6⅝″ x 9¾″ x .203″

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
- **Front** 23 15/16″ x 1¾″ x 7/32″ Clearance .010″
- **Rear** 23 15/16″ x 1¾″ x 7/32″ Clearance .010″
- **Hand** Rear Service

Lining Moulded **Diagram** 37-20



HUDSON WIRING DIAGRAM, 1936, MODEL, 6-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson — Model 6-Cylinder — Year 1936

Battery National **Type** **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.
Stop Light 6-8, 21 C.P. **Tail** 6.8, 2 C.P.
Parking Lights 6-8, 7 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 17 Amps. **Speed** 28 M.P.H.
Regulation 3rd Brush and Voltage Control **Cut-in** 6.4 Volts
Contact Gap

Ignition Auto-Lite
Contact Breaker Gap .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 2—3/16″ Comp. 2—3/32″
Diam. 3″ **Gap** .009″-.011″
Oiling—Type Plunger **Capacity** 6 Qts.

Valves **Intake Timing—Open** 11° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 19° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter

Steering Caster 2°-2½° Camber 1°-1¾° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 3¼ Gals.

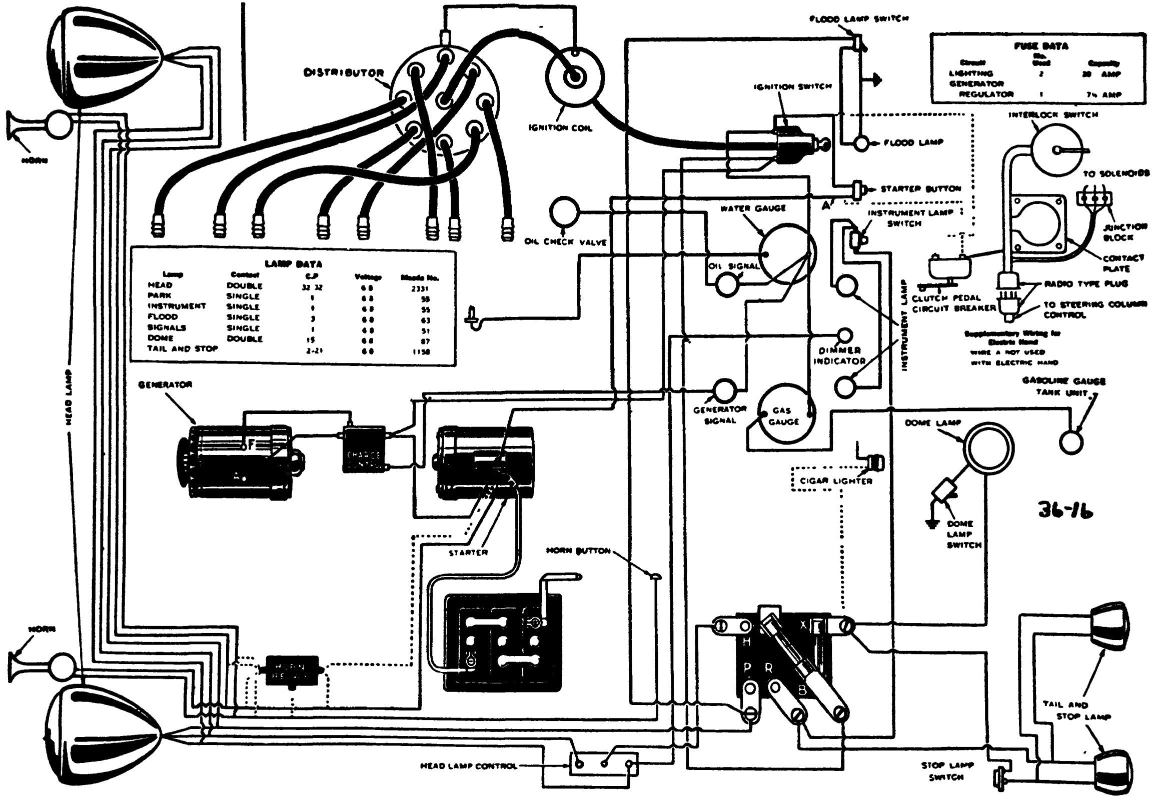
Clutch Own **Facings** Cork in Oil 5⅜″ x 8⅝″ x .203″

Gear Ratio 4.11 to 1 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22⅛″ x 2″ x 7/32″ Clearance .010″
- **Rear** 22⅛″ x 2″ x 7/32″ Clearance .010″
- **Hand** Rear Service

Lining Moulded and Woven Diagram 36-15



HUDSON WIRING DIAGRAM, 1936, MODEL, 8-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson **Model 8-Cylinder** **Year 1936**

Battery National **Type** **Volts 6** **Amps. 135**

Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.

Stop Light 6-8, 21 C.P. **Tail** 6-8, 2 C.P

Parking Lights 6-8, 1 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite — **Max. Chg. Rate** 17 Amps. **Speed** 28 M.P.H.

Regulation 3rd Brush and Voltage Control **Cut-in** 6.4 Volts

Contact Gap

Ignition Auto-Lite — **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing T.D.C.

Engine **Bore** 3″ **Stroke** 4½″ **Taxable H.P.** 28.8

Piston Ring—Width Oil 2—3/16″ Comp. 2—3/32″

Diam. 3″ **Gap** .009″-.011″

Oiling—Type Plunger **Capacity** 9 Qts.

Valves **Intake Timing—Open** 11° B.T.C. **Close** 60° A.B.C.

Intake Clearance .006″ Hot

Exhaust Timing—Open 50° B.B.C. **Close** 19° A.T.C.

Exhaust Clearance .008″ Hot

Carburetor Carter

Steering Caster 2° to 2½° Camber 1° to 1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gals.

Clutch Own **Facings** Cork in Oil 6⅜″ x 9¾″ x .203″

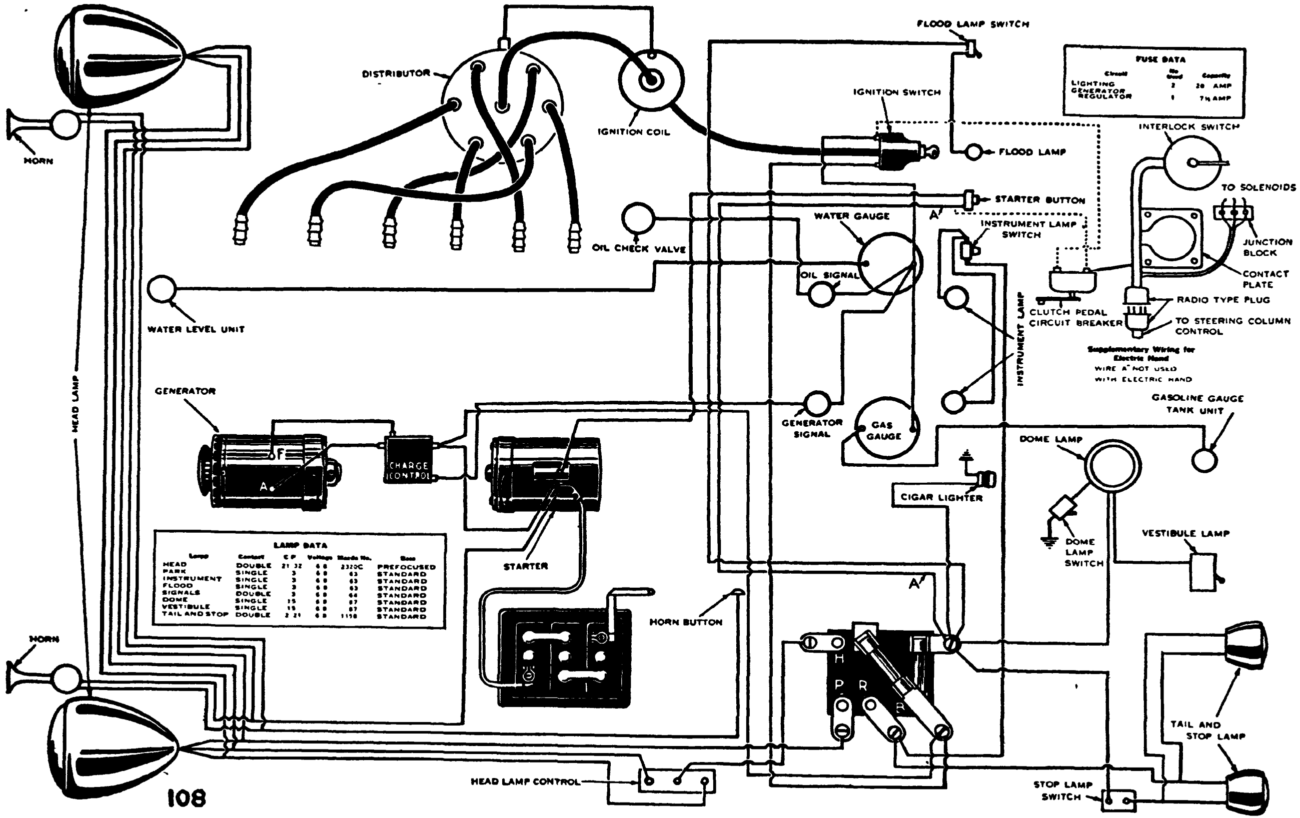
Gear Ratio 9 1/9 to 1 Spiral

Axle Semi-Floating

Brakes Bendix Hydraulic

- **Front** 23 15/16″ x 2″ x 7/32″ Clearance .010″
- **Rear** 23 15/16″ x 2″ x 7/32″ Clearance .010″
- **Hand** Rear Service

Lining Moulded and Woven Diagram 36-16



HUDSON WIRING DIAGRAM, 1935, MODEL 6-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson **Model 6-Cylinder** **Year 1935**

Battery National **Type** **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2320-C **Head Lights** 6-8, 21-32 C.P.
Mazda 64, 1150 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 17 Amps. **Speed** 2400 R.P.M. Armature
Regulation 3rd Brush **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .022″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 2—3/16″ Comp. 2—3/32″
Diam. 3″ **Gap** .009″-.011″ on All
Oiling—Type Plunger **Capacity** 6 Qts.

Valves **Intake Timing—Open** 11° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 19° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter

Steering Caster 3¼° Camber ½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 4½ Gals.

Clutch Own **Facings** Cork 5⅜″ x 8⅝″ x .203″

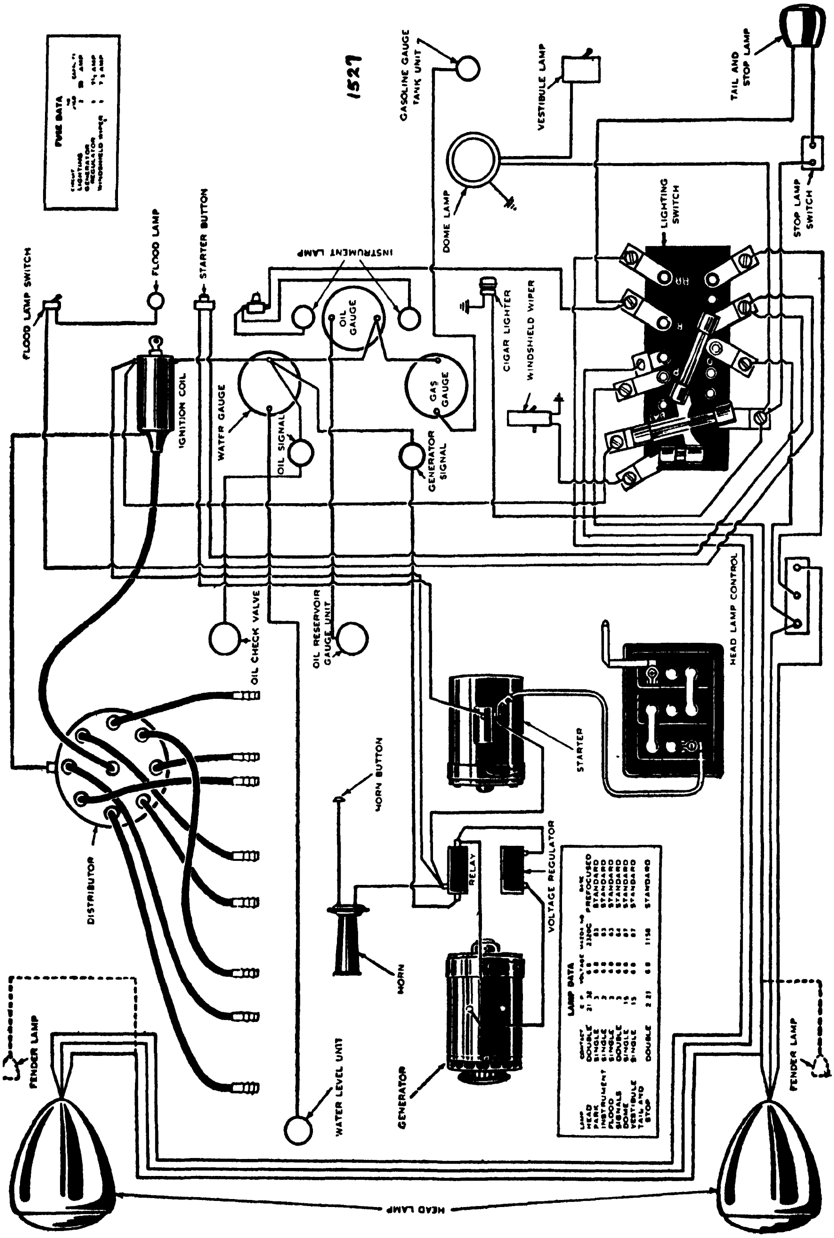
Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Mechanical Bendix
- **Front** 19 3/16″ x 2¼″ x 3/16″ Clearance Toe .008″ Heel .010″
- **Rear** 19 3/16″ x 2¼″ x 3/16″ Clearance Toe .008″ Heel .010″
- **Hand** 4 Wheels

Lining Moulded

Diagram 108



HUDSON WIRING DIAGRAM, 1934, MODELS LTS, LL, AND LT

Courtesy of Hudson Motor Car Company

Hudson Models LTS, LL and LT Year 1934

Battery Exide **Type** XTL-19-17F **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Cold **Max. Chg. Rate** 22 Amps. **Speed** 2200 R.P.M.
Regulation 3rd Brush **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018″-.020″
Spark Plug—Size 14 MM. **Gap** .022″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 4½″ **Taxable H.P.** 28.80
Piston Ring—Width Oil 1—⅛″, 1—3/16″ Comp. 2—3/32″
Diam. 3″ **Gap** .006″ on All
Oiling—Type Splash **Capacity** 7 Qts.

Valves **Intake Timing—Open** 11° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 19° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter W1

Steering Caster 1½° Camber 2° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump

Clutch Own **Facing** Cork 6½″ x 10″ x .203″

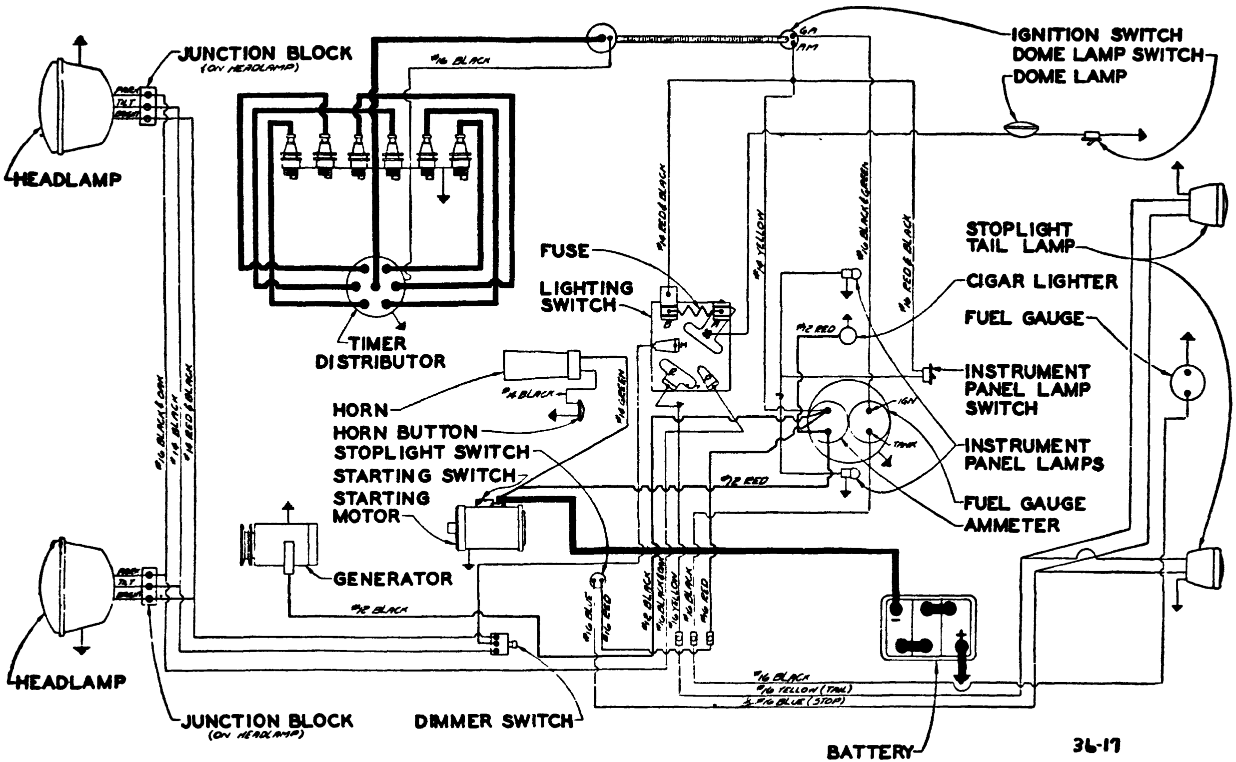
Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 19 3/16″ x 2¼″ x 3/16″ Clearance Heel .014″ Toe .008″
- **Rear** 19 3/16″ x 2¼″ x 3/16″ Clearance Heel .014″ Toe .008″
- **Hand** 4 Wheels

Lining Moulded

Diagram 1527



HUPMOBILE WIRING DIAGRAM, 1936, SERIES 618G

Courtesy of Hupp Motor Car Corporation

Hupmobile **Model Series 618G** **Year 1936**

Battery W.S.-2-15 **Type** 2-15 **Volts** 6 **Amps.** 100
Frame Connection Positive

Lighting Tung-sol or Mazda Double Contact
Head Lights 6-8, 21-32 C.P.
Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max Chg. Rate 15-18 Amps. **Speed** 30 M.P.H.
Regulation 3rd Brush **Cut-in** 6.7 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .018″-.020″
Spark Plug—Size 18 M.M. **Gap** .026″-.030″
Firing Order 1-5-3-6-2-4
Timing 7° B.T.C. Full Advance

Engine **Bore** 3.5″ **Stroke** 4¼″ **Taxable H.P.** 29.42
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3.5″ **Gap** Oil .007″-.015″ Comp. .007″-.012″
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 51° A.B.C.
Intake Clearance .010″
Exhaust Timing—Open 44° B.B.C. **Close** 3° A.T.C.
Exhaust Clearance .013″

Carburetor Stromberg & Carter

Steering Caster 1½° Camber 1° Toe-in ⅛″±1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gals.

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio 4.3 to 1 Spiral Gears

Axle Spicer Semi-Floating

Brakes Lockheed Hydraulic
Front 20⅞″ x 2″ x 3/16″ Clearance Heel .005″ Toe .010″
Rear 20⅞″ x 2″ x 3/16″
Hand Rear Service

Lining Moulded Diagram 36-17

Hupmobile **Model 417, Series W** **Year 1934**

Battery Willard **Type** WMB-17 **Volts** 6 **Amps.** 90
Frame Connection Positive

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 87 **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Cold **Max. Chg. Rate** 20 Amps. **Speed** 2250 R.P.M.
Regulation 3rd Brush **Cut-in** 7-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .015″-.018″
Spark Plug—Size 18 MM. **Gap** .028″
Firing Order 1-5-3-6-2-4
Timing 7° B.T.C.

Engine **Bore** 3½″ **Stroke** 3⅞″ **Taxable H.P.** 29.4
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3½″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 51° A.B.C.
Intake Clearance .010″ Hot
Exhaust Timing—Open 44° B.B.C. **Close** 3° A.T.C.
Exhaust Clearance .013″ Hot

Carburetor Stromberg EX32

Cooling System Centrifugal **Type** Pump **Capacity** 4 Gals.

Clutch Borg & Beck **Facing** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio Ring Gear 48 Pinion 11 Spiral Gears

Axle Spicer Semi-Floating

Brakes Midland Mechanical
- **Front** 1¾″ x 3/16″
- **Rear** 1¾″ x 3/16″
- **Hand** 4 Wheels

Lining Moulded

Hupmobile Model K, Series 321 Year 1933

Battery Willard **Type** WH-2-15 **Volts** 6 **Amps.** 119
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 32-32 C.P.
Single Contact **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 12.4 Amps. **Speed** 2150 R.P.M.
Regulation 3rd Brush **Cut-in** 7-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .015″-.018″
Spark Plug—Size 18 MM. **Gap** .026″-.030″
Firing Order 1-5-3-6-2-4
Timing 7° B.T.C. Full Advance

Engine **Bore** 3⅜″ **Stroke** 4¼″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—⅛″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 51° A.B.C.
Intake Clearance .010″ Hot
Exhaust Timing—Open 44° B.B.C. **Close** 3° A.T.C.
Exhaust Clearance .013″ Hot

Carburetor Carter W1

Steering Caster 1½° Camber 1½° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 4 Gals.

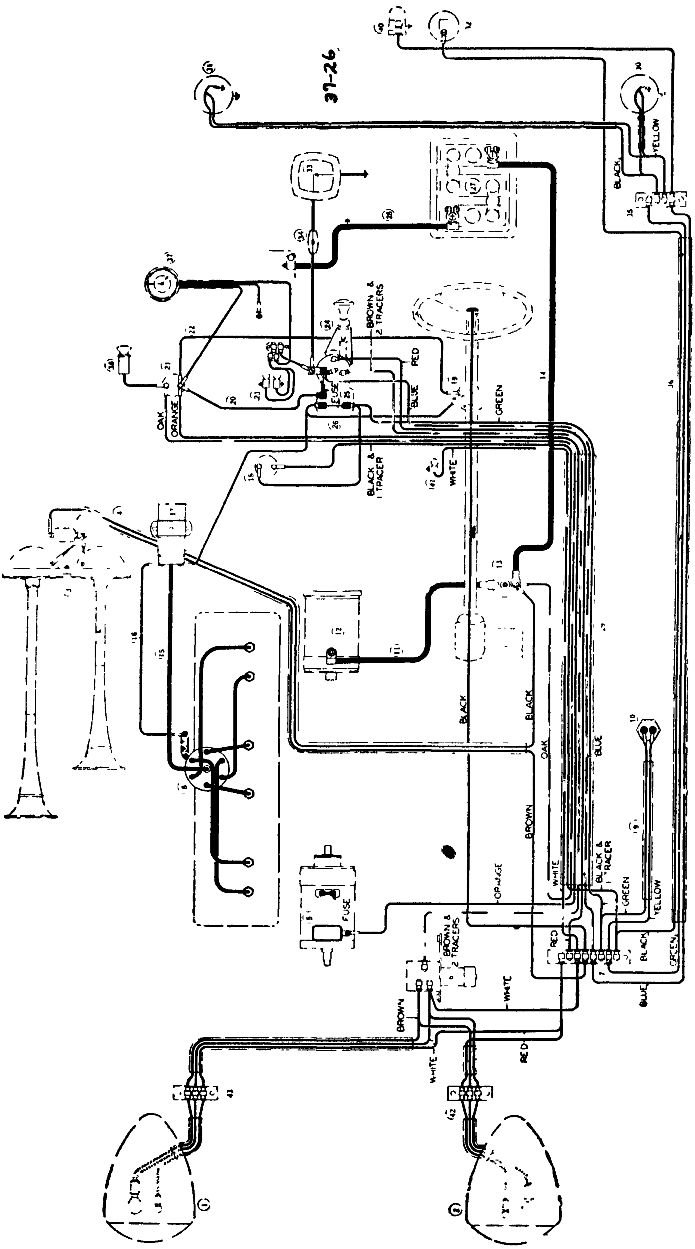
Clutch Borg & Beck **Facing** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio Ring Gear 52 Pinion 11 Hypoid

Axle Salisbury Semi-Floating

Brakes Midland Mechanical
- **Front** 33 3/16″ x 2″ x .210″ Clearance 1/16″
- **Rear** 33 3/16″ x 2″ x .210″ Clearance 1/16″
- **Hand** 4 Wheels

Lining Moulded



LaFAYETTE WIRING DIAGRAM, 1937, MODEL 400
Courtesy of Nash Motors Company

La Fayette **Model 400** **Year 1937**

Battery U.S.L. **Type** **Volts** 6-8 **Amps.** 100
Frame Connection Positive

Lighting **Head Lights** 6-8, 32-32 C.P.
Double Contact **Stop Light** 6-8 Volts **Tail** 6-8, 3 C.P., 21 C.P.
Parking Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 18 Amps. Hot **Speed** 2800 R.P.M., Arm.
Regulation **Cut-in** 7 Volts, 775 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 10° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4⅜″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—⅛″, 3/16″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** Oil .010″ Comp. .010″
Oiling—Type Gear Pump **Capacity** 6 Qts. **Pressure** 30 Lbs. @ 20 M.P.H.

Valves **Intake Timing—Open** **Close**
Intake Clearance Hot .015″ Operating, .015″ Timing
Exhaust Timing—Open **Close**
Exhaust Clearance Hot .015″ Operating, .015″ Timing

Carburetor Stromberg EX22

Steering Caster 2½° Camber 1½° Toe-in ⅛″

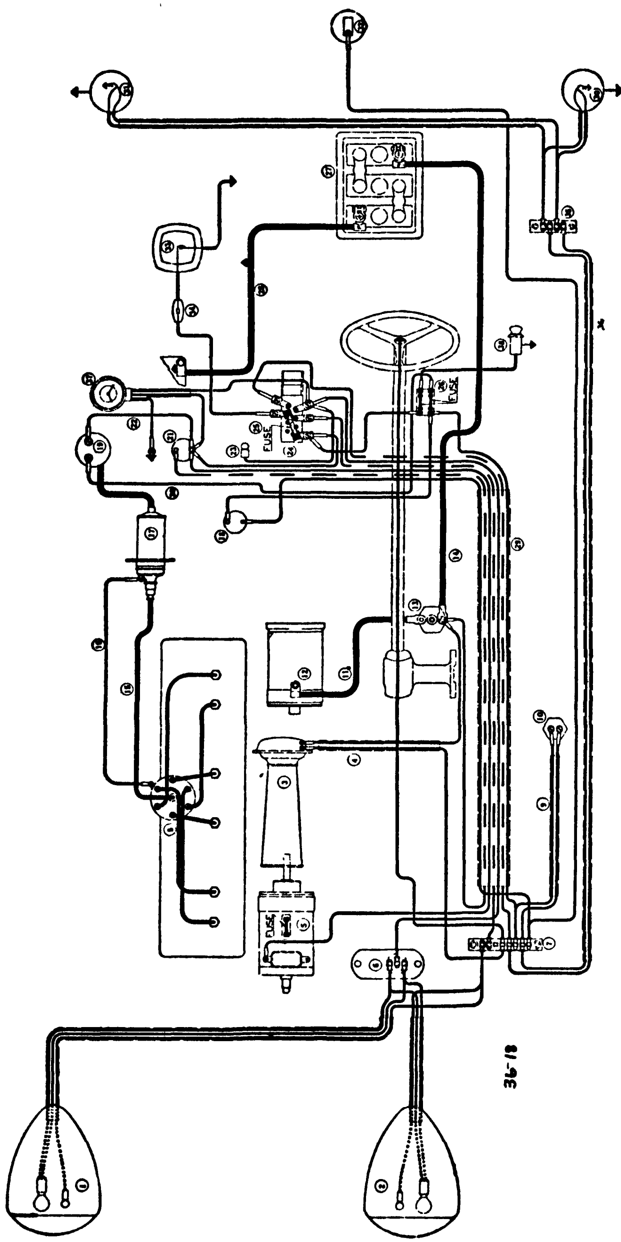
Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20 Qts.

Clutch Borg & Beck **Facings** Woven 5⅝″ x 9¼″ x ⅛″ 2 Required

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 22 1/16″ x 2″ x 3/16″ Clearance .010″
Rear 22 1/16″ x 2″ x 3/16″ Clearance .010″
Hand Rear Service
Lining Moulded Diagram 37-26



LA FAYETTE WIRING DIAGRAM, 1936, MODEL, 6-CYLINDER
Courtesy of Nash Motors Company

La Fayette Model 6-Cylinder Year 1936

Battery Globe **Type** **Volts** 6 **Amps.** 110
Frame Connection Positive

Lighting **Head Lights** 6-8, 32-32 C.P.
Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite — **Max. Chg. Rate** 18 Amps. Hot **Speed** 24 M.P.H.
Regulation **Cut-in** 7 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite — **Contact Breaker Gap** .020″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 10° B.T.C. Retard

Engine **Bore** $3\frac{1}{4}$″ **Stroke** $4\frac{3}{8}$″ **Taxable H.P.** 25.35
Piston Ring—Width Oil 1—$\frac{1}{8}$″, 1—$\frac{3}{16}$″ Comp. 2—$\frac{1}{8}$″
Diam. $3\frac{1}{4}$″ **Gap** .010″-.025″
Oiling—Type Pump **Capacity** $5\frac{3}{4}$ Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .015″
Exhaust Timing—Open **Close**
Exhaust Clearance .015″

Carburetor Marvel B2

Steering Caster 2° to 4° Camber 0° to $1\frac{1}{2}$° Toe-in $\frac{1}{8}$″

Cooling System Centrifugal **Type** Pump **Capacity** 19 Qts.

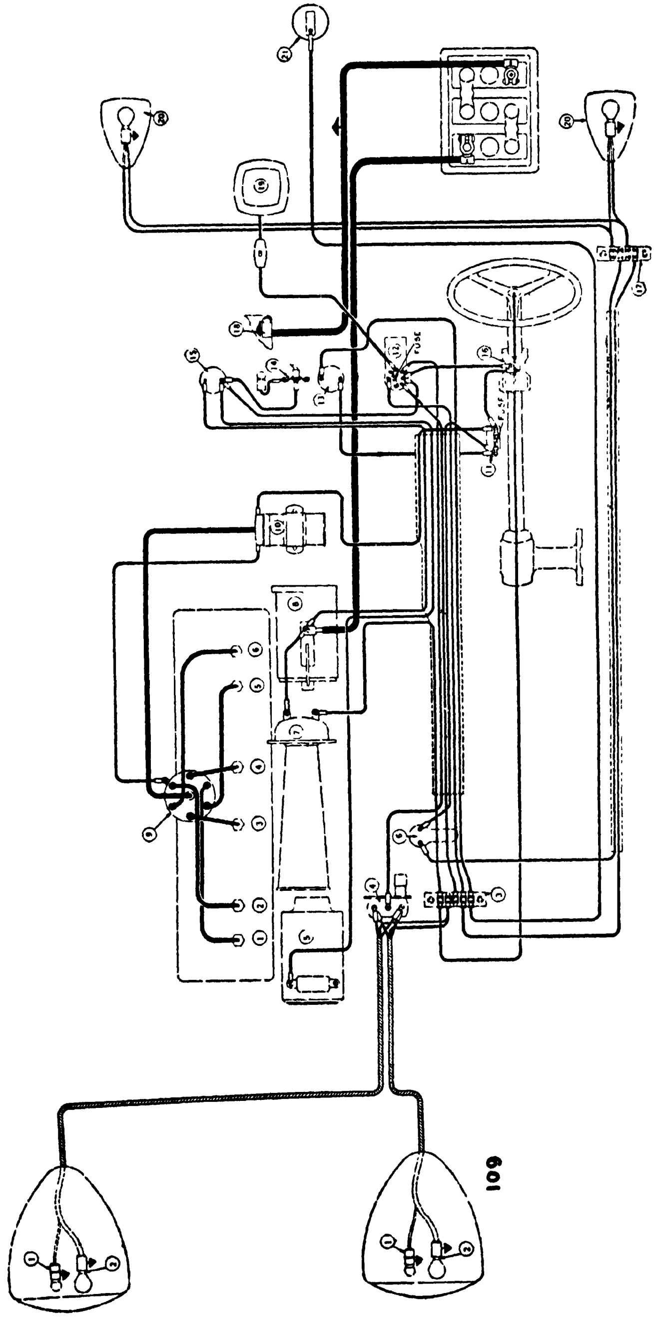
Clutch Borg & Beck **Facings** Woven $5\frac{3}{4}$″ x 9″ x .133″ 2 Required

Gear Ratio 4.44 to 1 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** $22\frac{1}{16}$″ x 2″ x $\frac{3}{16}$″ Clearance .010″
- **Rear** $22\frac{1}{16}$″ x 2″ x $\frac{3}{16}$″ Clearance .010″
- **Hand** Service Brakes Rear Wheels

Lining Moulded **Diagram** 36-18



109

LA FAYETTE DIAGRAM, 1935, SERIES 3510

Courtesy of Nash Motors Company

La Fayette Model Series 3510 Year 1935

Battery Globe **Type** **Volts** 6 **Amps.** 110
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 32-21 C.P.
Single Contact **Dash** 6-8, 3 C.P.
Double Contact **Tail and Stop** 6-8, 3-21 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 17 Amps. **Speed** 24 M.P.H.
Regulation 3rd Brush **Cut-in** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing "IGN" Mark on Front Vibration Damper under Pointer

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35
Piston Ring—Width Oil 1—⅛″, 1—3/16″ Comp. 2—⅛″
Diam. 3¼″ **Gap** .010″-.025″ on All
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .015″
Exhaust Timing—Open **Close**
Exhaust Clearance .015″

Carburetor Marvel

Steering Caster 0°-1° Camber 0°-1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 19 Qts.

Clutch Borg & Beck **Facings** Moulded 5¾″ x 9″ x .133″ 2 Required

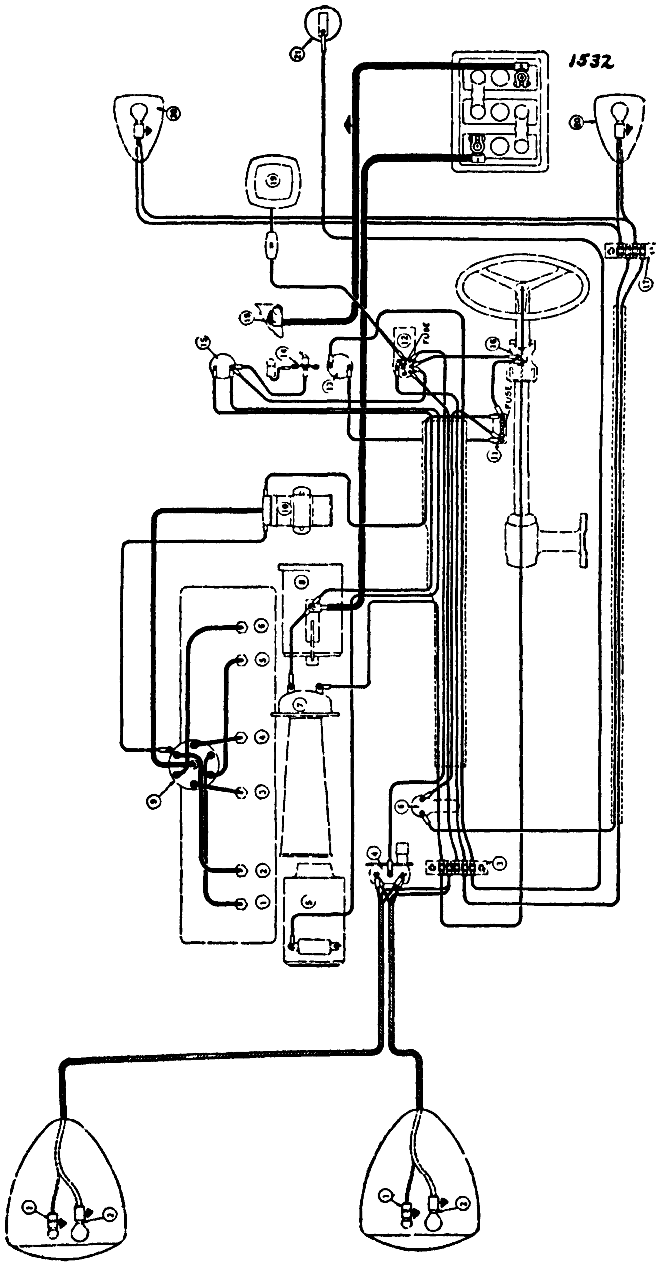
Gear Ratio Ring Gear 47 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Mechanical Bendix
- **Front** 23¾″ x 1¾″ x 5/32″ Clearance .010″
- **Rear** 23¾″ x 1¾″ x 5/32″ Clearance .010″
- **Hand** 4 Wheels

Lining Moulded

Diagram 109



LA FAYETTE WIRING DIAGRAM, 1934, MODEL SERIES 110
Courtesy of Nash Motors Company

La Fayette **Model Series 110** **Year 1934**

Battery Globe **Type** No. 71 **Volts** 6 **Amps.** 102
Frame Connection Positive

Lighting Mazda 1116 **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 17 Amps. **Speed** 1700 R.P.M.
Regulation 3rd Brush **Cut-in** 7-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .018″-.020″
Spark Plug—Size 18 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing "IGN" on Vibration Damper to Pointer on Cover

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35
Piston Ring—Width Oil 1—⅛″, 1—³⁄₁₆″ Comp. 2—⅛″
Diam. 3¼″ **Gap** .010″ on All
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .008″ Hot
Exhaust Timing—Open **Close**
Exhaust Clearance .008″ Hot

Carburetor Marvel

Steering Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 4¾ Gals.

Clutch Borg & Beck **Facing** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

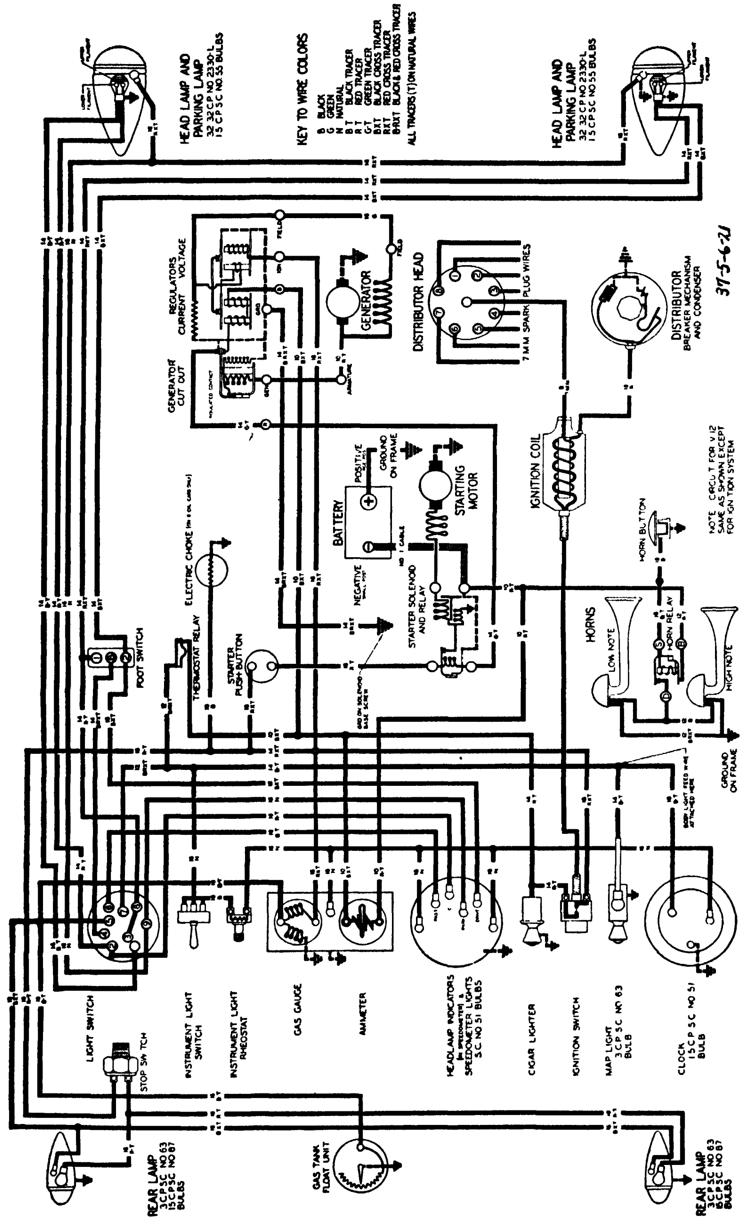
Gear Ratio Ring Gear 47 Pinion 10 Spiral Gears

Axle Spicer Semi-Floating

Brakes Bendix Mechanical
- **Front** 23¾″ x 1¾″
- **Rear** 23¾″ x 1¾″
- **Hand** 4 Wheels

Lining Moulded

Diagram 1532



LaSALLE WIRING DIAGRAM, 1937, MODEL V-8

Courtesy of Cadillac Motor Car Company

La Salle **Model V-8** **Year 1937**

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 110
Frame Connection Positive

Lighting Mazda 2330-L D.C. **Head Lights** 6-8, 32-32 C.P.
Mazda 87 **Stop Light** 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Mazda 55 **Parking Lights** 6-8, 1.5 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 28 Amps. Hot **Speed** 4000 R.P.M., Arm.
Regulation Voltage **Cut-in** 6.5 Volts
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .013″
Spark Plug—Size 14 M.M. **Gap** .027″
Firing Order 1L-4R-4L-2L-3R-3L-2R-1R
Timing 5° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 36.45
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** Oil .007″ Comp. 007″
Oiling—Type Gear Pump **Capacity** 7 Qts.
Pressure 30 Lbs. @ 60 M.P.H.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.
Intake Clearance Zero
Exhaust Timing—Open 52° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Zero

Carburetor Stromberg AA25

Steering Caster ¼° Camber ¼° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 25 Qts.

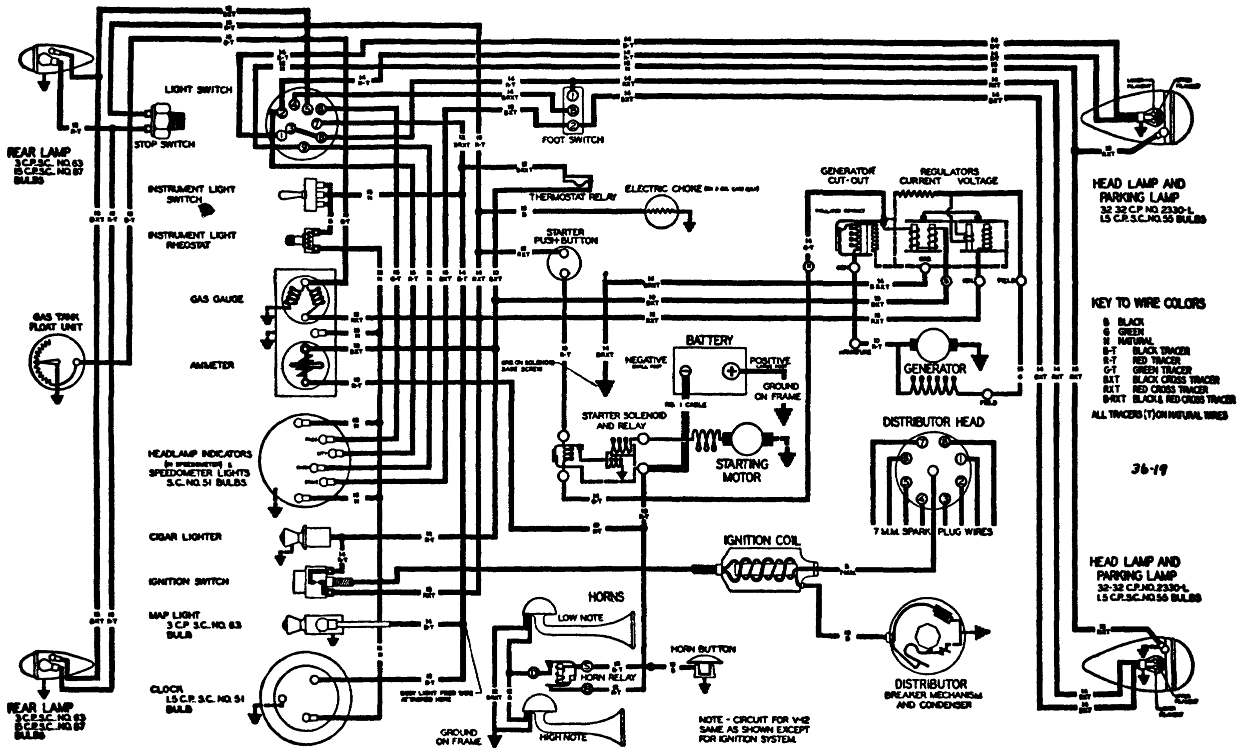
Clutch Long **Facings** Woven 6½″ x 10½″ x .137″ 2 Required

Gear Ratio Ring Gear 47 Pinion 12 Hypoid Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 25⅞″ x 2″ x 3/16″ **Clearance** .010″
Rear 25⅞″ x 2″ x 3/16″ **Clearance** .010″
Hand Rear Service

Lining Moulded **Diagram 37-21**



LA SALLE WIRING DIAGRAM, 1936, MODEL, 8-CYLINDER
Courtesy of Cadillac Motor Car Company

La Salle **Model 8-Cylinder** **Year 1936**

Battery Delco-Remy **Type** **Volts 6** **Amps. 107**
Frame Connection Positive

Lighting Mazda 2330-L **Head Lights** 6-8, 32-32 C.P.
Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 2 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 22 Amps. Hot **Speed** 1900 R.P.M.
Regulation **Cut-in** 6.8 Volts
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .018″ to .024″
Spark Plug—Size 14 M.M. **Gap** .025″-.027″
Firing Order 1-6-2-5-8-3-7-4
Timing 8° B.T.C. Full Advance

Engine **Bore** 3″ **Stroke** 4⅜″ **Taxable H.P.** 28.80
Piston Ring—Width Oil 1—.154″, 1—.123″ Comp. ⅛″
Diam. 3″ **Gap** .007″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 37° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 34° B.B.C. **Close** 3° A.T.C.
Exhaust Clearance .009″ Hot

Carburetor Stromberg EE15

Steering Caster 2° Camber 1° Toe-in ⅛″

Cooling System Pump **Type** Centrifugal **Capacity** 16 Qts.

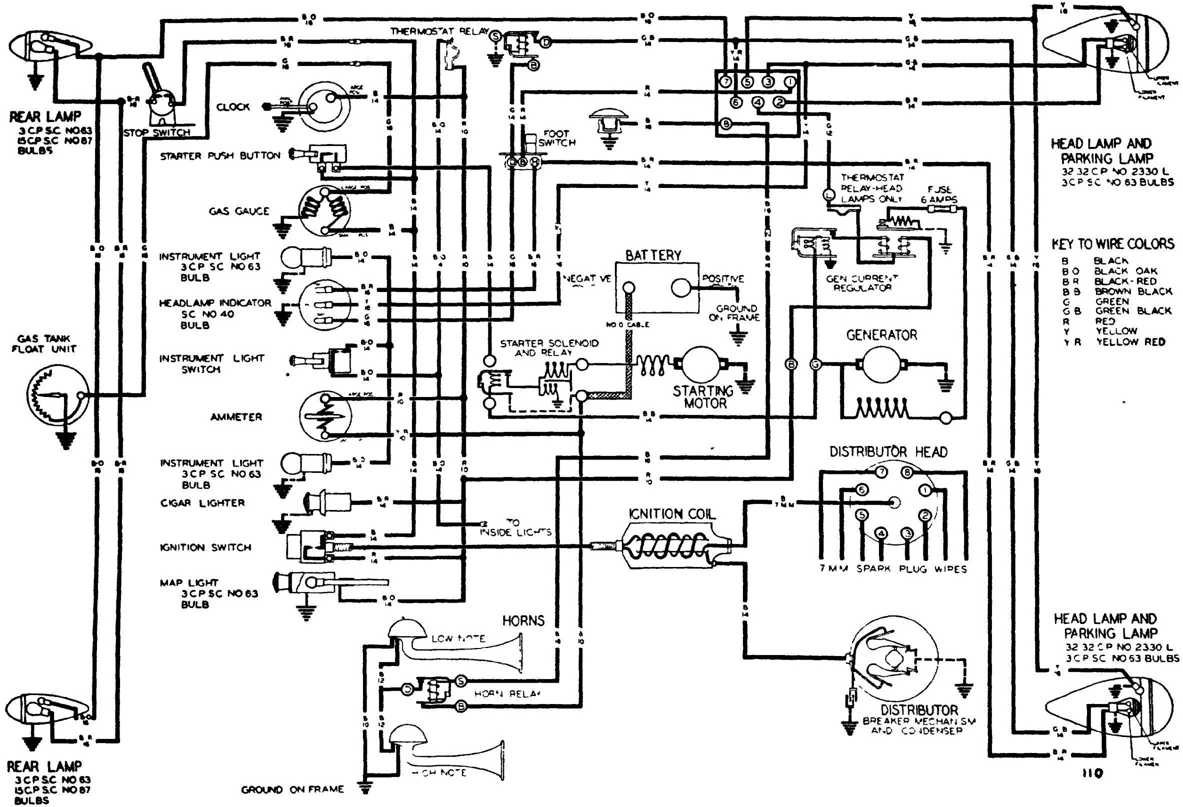
Clutch Long **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio 4.5 to 1 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 25⅞″ x 2″ x 3/16″ Clearance .010″
Rear 25⅞″ x 2″ x 3/16″ Clearance .010″
Hand Rear Wheels

Lining Moulded and Woven **Diagram 36-19**



LA SALLE WIRING DIAGRAM, 1935, MODEL 350
Courtesy of Cadillac Motor Car Company

La Salle   Model 350   Year 1935

Battery Delco **Type** 17DW **Volts** 6 **Amps.** 130
Frame Connection Positive

Lighting Mazda 2330L **Head Lights** 6-8, 32-32 C.P.
Mazda 63L, 87L **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Mazda 63L **Side Lights** 6-8, 3 C.P.

Starter and Generator

Generator Hot **Max. Chg. Rate** 16-25 Amps. **Speed**
Regulation 3rd Brush **Cut-in** 6.75-7.25 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug –Size 18 M.M. **Gap.** .025″-.027″
Firing Order 1-6-2-5-8-3-7-4
Timing 8° B.T.C.

Engine **Bore** 3″ **Stroke** 4¼″ **Taxable H.P.** 28.80
Piston Ring—Width Oil 1—⅛″, 1—5/32″ Comp. 2—⅛″
Diam. 3″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.
Intake Clearance .0118″
Exhaust Timing—Open 40° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .0118″

Carburetor Stromberg EE23

Steering Caster 2° Camber ½° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 4.6 Gals.

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x .133″ 2 Required

Gear Ratio Ring Gear 43 Pinion 9 Spiral Gear

Axle Own Semi-Floating

Brakes Hydraulic Bendix
- **Front** 25⅞″ x 2″ x 3/16″ Clearance .010″
- **Rear** 25⅞″ x 2″ x 3/16″ Clearance .010″
- **Hand** Rear Service

Lining Moulded

Diagram 110

La Salle **Model 350, Series 50** **Year 1934**

Battery Delco **Type** 17-DW **Volts** 6 **Amps.** 130
Frame Connection Positive

Lighting Mazda 2330-L **Head Lights** 6-8, 32-32 C.P.
Mazda 63, 87 **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 9-11 Amps. **Speed** 1400 R.P.M.
Regulation External Regulator **Cut-in** 6.75-7.25 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 MM. **Gap** .026″
Firing Order 1-6-2-5-8-3-7-4
Timing 8° B.T.C.

Engine **Bore** 3″ **Stroke** 4¼″ **Taxable H.P.** 28.80
Piston Ring—Width Oil 1—.123″ Comp. 3—3/32″
Diam. 3″ **Gap** Comp. .007″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 37° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 34° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .009″ Hot

Carburetor Stromberg

Cooling System Centrifugal **Type** Pump

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio Ring Gear 43 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
- **Front** 1¾″
- **Rear** 1¾″
- **Hand** Rear Service

Lining Moulded

La Salle **Model 345-C** **Year 1933**

Battery Delco **Type** 17-CF **Volts** 6 **Amps.** 130
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 32-32 C.P.
Single Contact **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 14-15 Amps. **Speed** 1800-2000 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 MM. **Gap** .025″-.028″
Firing Order 1R-1L-4R-4L-2L-3R-3L-2R
Timing 9° 12′ Flywheel or .039″ Piston B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4$^{15}/_{16}$″ **Taxable H.P.** 36.45
Piston Ring—Width Oil 1—$^{3}/_{16}$″, 1—$^{5}/_{32}$″ Comp. 1—⅛″, 2—$^{3}/_{32}$″
Diam. 3⅜″ **Gap** Oil .003″ Comp. .005″
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 6° B.T.C. **Close** 42° A.B.C.
Intake Clearance .004″ Hot
Exhaust Timing—Open 38° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .006″ Hot

Carburetor Own

Steering Caster 2½° Camber 1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 6½ Gals.

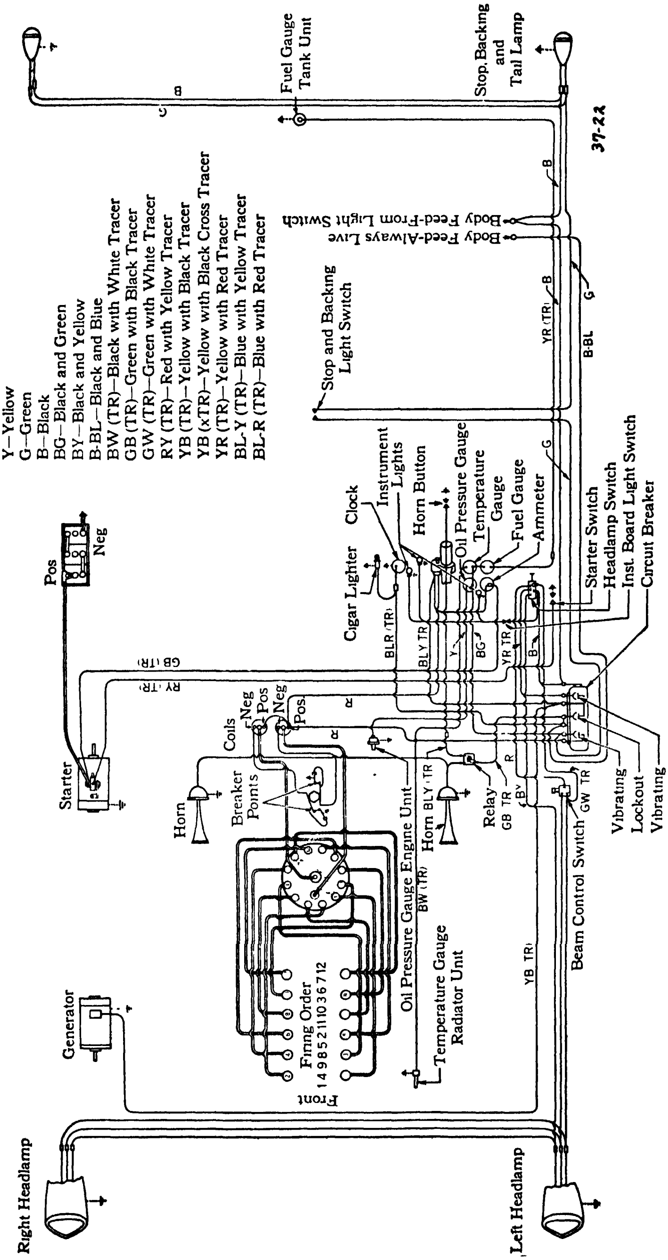
Clutch Own **Facings** Woven 5½″ x 10″ x .135″ 4 Required

Gear Ratio Ring Gears 46 Pinion 10 Spiral Gears

Axle Own ¾ Floating

Brakes Own Mechanical and Booster
- **Front** 29¾″ x 2″ x $^{3}/_{16}$″ Clearance .007″
- **Rear** 29¾″ x 2″ x $^{3}/_{16}$″ Clearance .007″
- **Hand** Rear Service

Lining Semi-Moulded



LINCOLN WIRING DIAGRAM, 1937, MODEL V-12

Courtesy of Ford Motor Company

Lincoln **Model V-12** **Year 1937**

Battery Exide **Type** - **Volts** 6-8 **Amps.** 147

Frame Connection Negative

Lighting **Head Lights** 6-8, 32-32 C.P.

Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

Parking Lights 6-8, 1.5 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 22 Amps. Hot **Speed** 1300 R.P.M., Arm.
Regulation Voltage **Cut-in** 7 Volts, 460 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .020″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1L-2R-5L-4R-3L-1R-6L-5R-2L-3R-4L-6R
Timing T.D.C.

Engine **Bore** 3⅛″ **Stroke** 4½″ **Taxable H.P.** 46.80

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅛″ **Gap** Oil .007″ Comp. .008″

Oiling—Type Gear Pump **Capacity** 12 Qts. **Pressure** 40 Lbs. @ 50 M.P.H.

Valves **Intake Timing—Open** 21° B.T.C. **Close** 47° A.B.C.
Intake Clearance Hot .004″
Exhaust Timing—Open 57° B.B.C. **Close** 11° A.T.C.
Exhaust Clearance Hot .006″

Carburetor Stromberg EE1

Steering Caster 1½° Camber 1° Toe-in 1/16″

Cooling System—Centrifugal **Type** Pump, Belt **Capacity** 32 Qts.

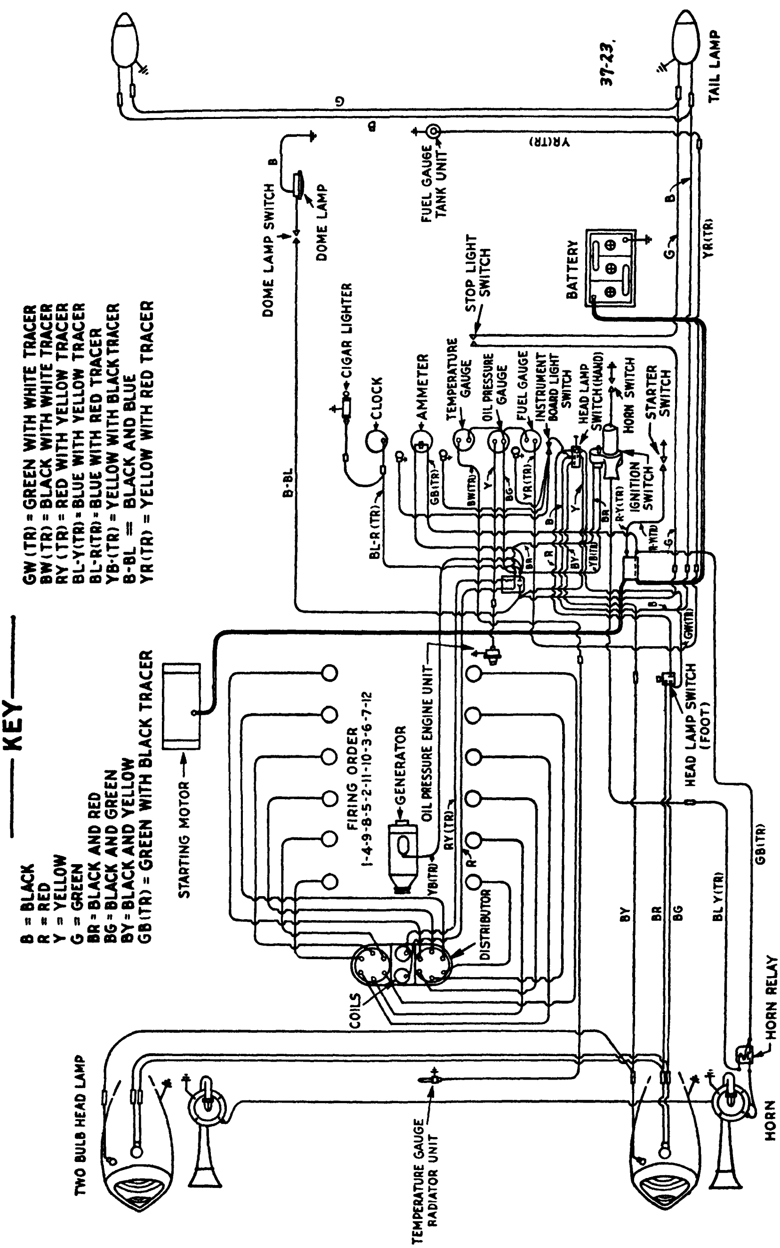
Clutch Long **Facings** Woven 7″ x 12″ x .137″ 2 Required

Gear Ratio Ring Gear 55 Pinion 12 Spiral Gears

Axle Timken Full-Floating

Brakes Bendix Mechanical
Front 33½″ x 2½″ x ¼″ Clearance .010″
Rear 33½″ x 2½″ x ¼″ Clearance .010″
Hand All Four Wheels

Lining Moulded **Diagram 37-22**



LINCOLN-ZEPHYR WIRING DIAGRAM, 1937, 12-CYLINDER

Courtesy of Ford Motor Company

Lincoln-Zephyr   Model 12-Cylinder   Year 1937

Battery Own **Type** **Volts** 6-8 **Amps.** 96
Frame Connection Positive

Lighting Double Filament **Head Lights** 6-8, 32-32 C.P.
Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 1.5 C.P.

Starter and Generator Own

Generator Own **Max. Chg. Rate** 15 Amps. Hot **Speed** 1800 R.P.M., Arm.
Regulation **Cut-in** 7 Volts, 10 M.P.H.
Relay Air Gap **Contact Gap**

Ignition Own **Contact Breaker Gap** .014″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1L-2R-5L-4R-3L-1R-6L-5R-2L-3R-4L-6R
Timing 4° A.T.C.

Engine **Bore** 2¾″ **Stroke** 3¾″ **Taxable H.P.** 36.30
Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″
Diam. 2¾″ **Gap** Oil .008″ Comp. .008″
Oiling—Type Gear Pump **Capacity** 6 Qts. **Pressure** 30 Lbs. @50 M.P.H.

Valves **Intake Timing—Open** 19½° B.T.C. **Close** 54½° A.B.C.
Intake Clearance Cold .013″ Operating and Timing
Exhaust Timing—Open 57½° B.B.C. **Close** 16½° A.T.C.
Exhaust Clearance Cold .013″ Operating and Timing

Carburetor Stromberg EE1

Steering Caster 7° Camber ¾° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 27 Qts.

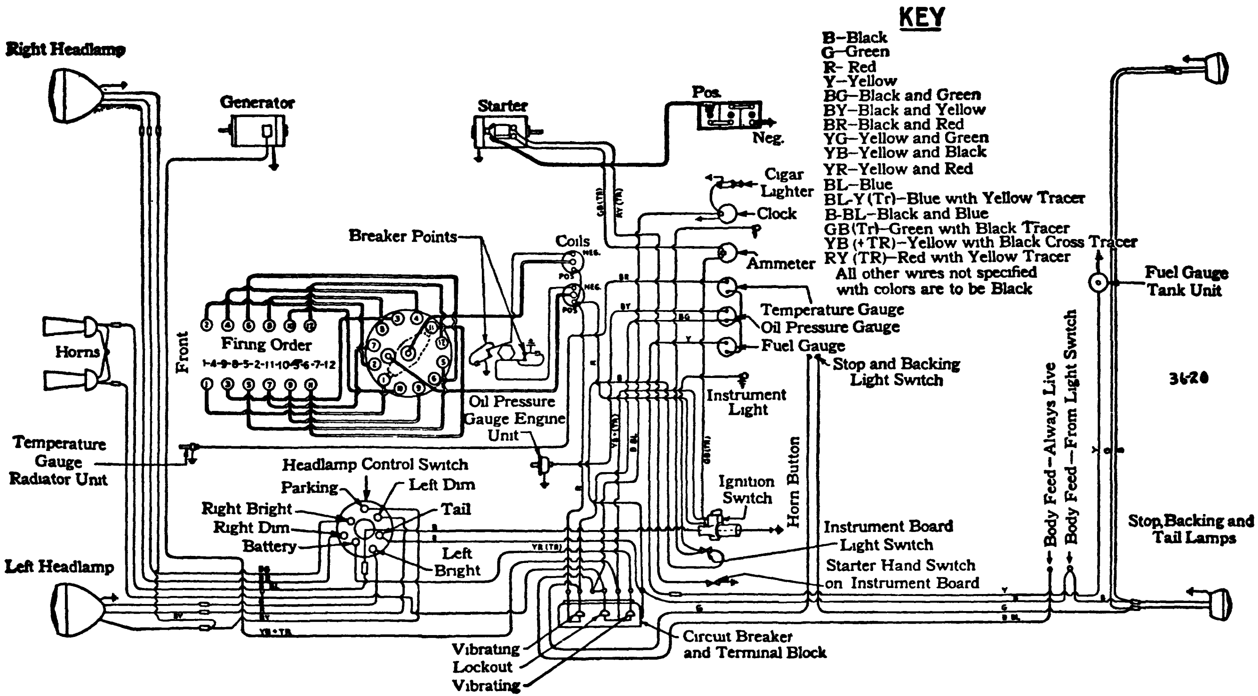
Clutch Long **Facings** Woven 6″ x 10″ x .137″ 2 Required

Gear Ratio Ring Gear 39 Pinion 9 Spiral Gears

Axle Own ¾-Floating

Brakes Bendix Mechanical
- **Front** 23⅞″ x 1¾″ x 7/32″ Clearance .010″
- **Rear** 23⅞″ x 1¾″ x 7/32″ Clearance .010″
- **Hand** All Four Wheels

Lining Moulded **Diagram** 37-23



LINCOLN WIRING DIAGRAM, 1936, MODEL, 12-CYLINDER

Courtesy of Ford Motor Company

Lincoln **Model 12-Cylinder** **Year 1936**

Battery Exide **Type** X-21-L **Volts 6** **Amps. 147**

Frame Connection Negative

Lighting Two Filament **Head Lights** 6-8, 32-21 C.P.

Stop Light 6-8, 21-3 C.P. **Tail** 6-8, 21-3 C.P.

Parking Lights 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 16 Amps. Hot **Speed** 20-25 M.P.H.

Regulation Field Brush **Cut-in** 6.75-7.5 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 18 M.M. **Gap** .025″

Firing Order 1-4-9-8-5-2-11-10-3-6-7-12

Timing Initial Adv. D.C. Max. 17° Crankshaft

Engine **Bore** 3.125″ **Stroke** 4.50″ **Taxable H.P.** 46.8

Piston Ring—Width Oil 2—.1545″-.1550″ Comp.2—.1235″-.1240″
Diam. 3.125″ **Gap** Oil .007″-.015″ Comp. .008″-.015″

Oiling—Type Pressure **Capacity** 12 Qts.

Valves **Intake Timing—Open** 21° B.T.C. **Close** 47° A.B.C.

Intake Clearance .004″

Exhaust Timing—Open 57° B.B.C. **Close** 11° A.T.C.

Exhaust Clearance .006″

Carburetor Stromberg EE1

Steering Caster 1½° Camber 1° Toe-in ⅛″

Cooling System—Pump **Type** Vane-Centrif. **Capacity** 32 Qts.

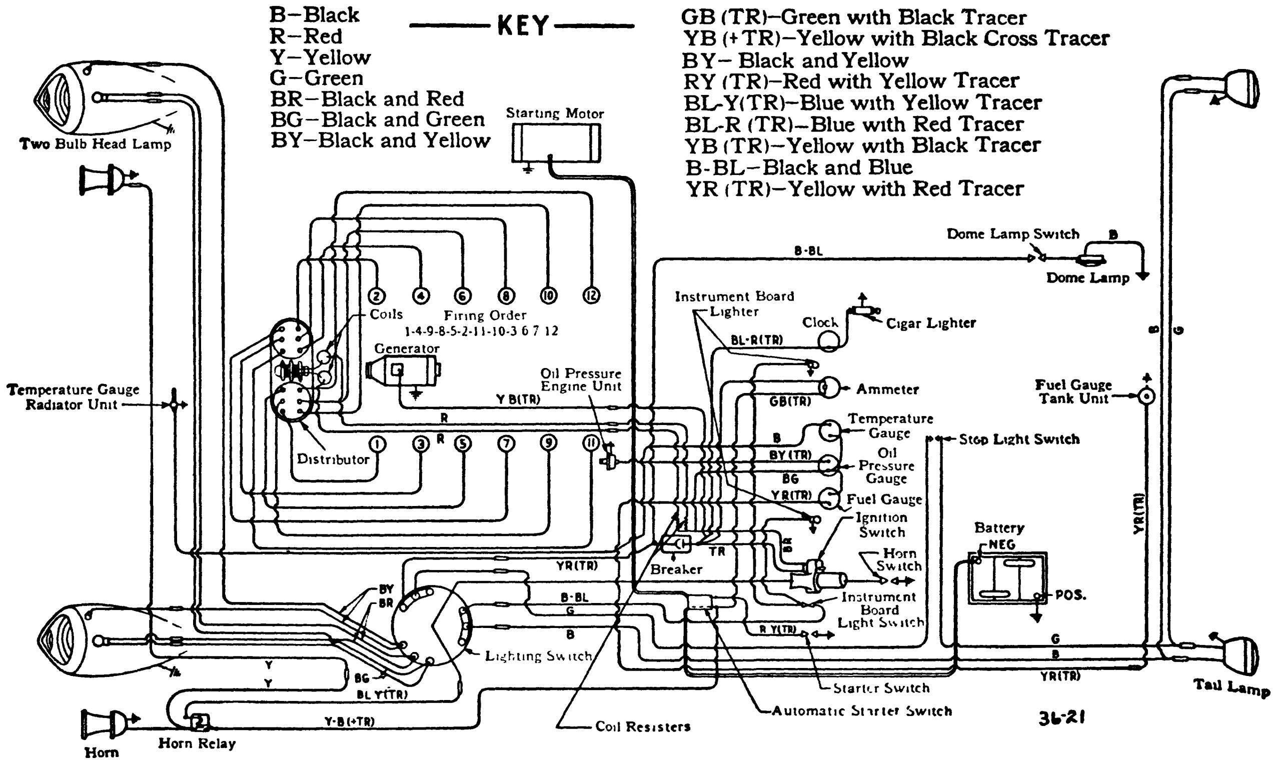
Clutch Long **Facings** Woven 9″ x 12″ x .137″ 2 Required

Gear Ratio 4.58 to 1

Axle Full-Floating

Brakes Mechanical
- **Front** 33½″ x 2½″ x ¼″ Clearance .010″
- **Rear** 33½″ x 2½″ x ¼″ Clearance .010″
- **Hand** All Four Wheels

Lining Moulded **Diagram 36-20**



LINCOLN-ZEPHYR WIRING DIAGRAM, 1936, MODEL, 12-CYLINDER

Courtesy of Ford Motor Company

Lincoln-Zephyr Model 12-Cylinder Year 1936

Battery Ford **Type** **Volts** 6 **Amps.** 96
Frame Connection Positive

Lighting Double Filament **Head Lights** 6-8, 32-32 C.P.
Stop Light **Tail**
Parking Lights

Starter and Generator Ford

Generator Ford **Max. Chg. Rate** 18 Amps. **Speed** 10 M.P.H.
Regulation 3rd Brush **Cut-in** 7 Volts
Relay Air Gap **Contact Gap**

Ignition Ford **Contact Breaker Gap** .014″-.016″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-4-9-8-5-2-11-10-3-6-7-12
Timing Initial Advance 4° Crankshaft

Engine **Bore** 2.75″ **Stroke** 3.75″ **Taxable H.P.** 36.3
Piston Ring—Width Oil 1—.1545″-.155″ Comp. 2—.093″-.0935″
Diam. 2.75″ **Gap** Oil .008″-.013″ Comp. .008″-.013″
Oiling—Type Pressure **Capacity** 6 Qts.

Valves **Intake Timing—Open** 19°30′ B.T.C. **Close** 54°30′ A.B.C.
Intake Clearance .0125″-.0135″
Exhaust Timing—Open 57°30′ B.B.C. **Close** 16°30′ A.T.C.
Exhaust Clearance .0125″-.0135″

Carburetor Stromberg EE1

Steering

Cooling System Circulation **Type** Pump **Capacity** 27 Qts.

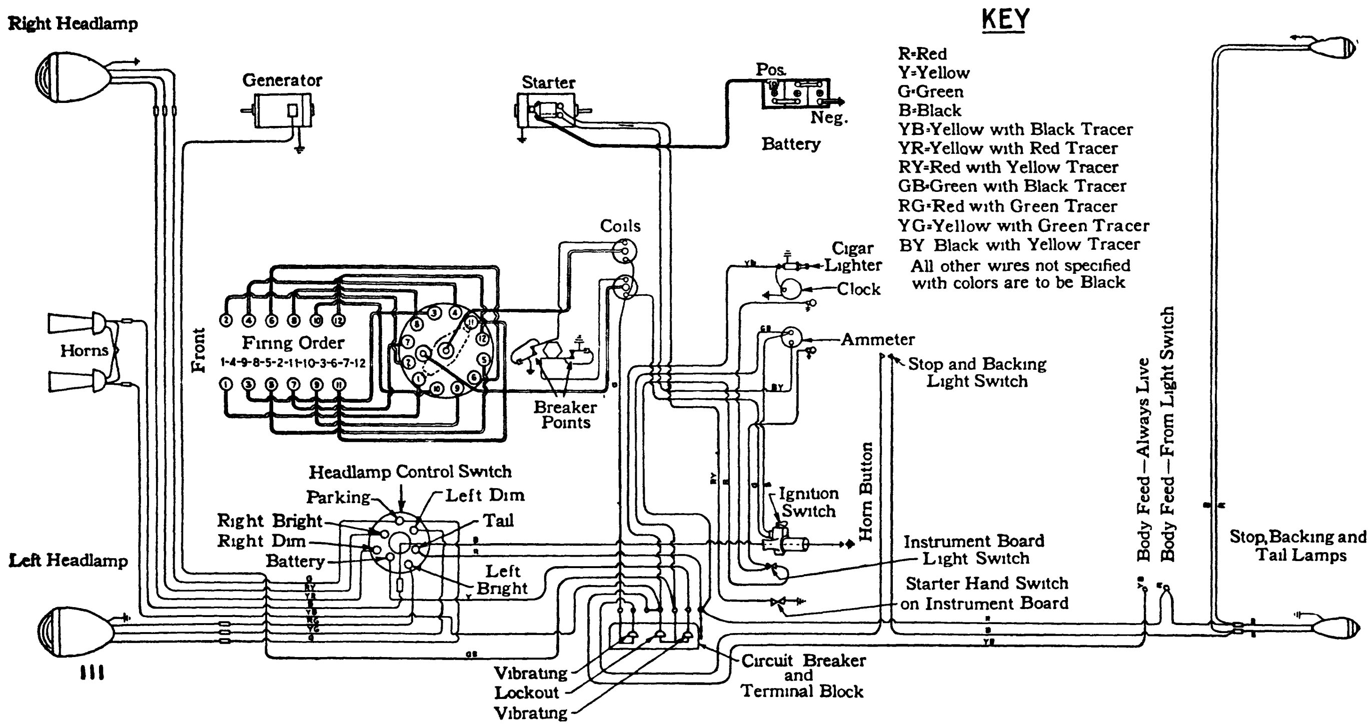
Clutch Long **Facings** Moulded 6″ x 10″ x .140″ 2 Required

Gear Ratio 4.33 to 1 Spiral Bevel

Axle Own ¾-Floating

Brakes Four-Wheel Mechanical
- **Front** 23.9″ x 1.75″ x .21″
- **Rear** 23.9″ x 1.75″ x .21″
- **Hand** All Four Wheels

Lining Moulded **Diagram** 36-21



LINCOLN WIRING DIAGRAM, 1935, MODEL V-12

Courtesy of Ford Motor Company

Lincoln **Model V-12** **Year 1935**

Battery Exide **Type** X-21-L **Volts** 6 **Amps.** 147

Frame Connection Negative

Lighting **Head Lights** 6-8, 32-21 C.P.

Dash and Tail

Side Lights 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 15 Amps. **Speed** 20 M.P.H.

Regulation 3rd Brush **Cut-in** 7.5 Volts

Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″

Spark Plug—Size 18 M.M. **Gap** .022″

Firing Order 1-4-9-8-5-2-11-10-3-6-7-12

Timing 7° B.T.C. Retard

Engine **Bore** 3⅛″ **Stroke** 4½″ **Taxable H.P.** 46.8

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″

Diam. 3⅛″ **Gap** .013″ on All

Oiling—Type Pump **Capacity** 12 Qts.

Valves **Intake Timing—Open** 21° B.T.C. **Close** 47° A.B.C.

Intake Clearance .003″ Cold

Exhaust Timing—Open 57° B.B.C. **Close** 11° A.T.C.

Exhaust Clearance .006″ Cold

Carburetor Stromberg EE22

Steering Caster 2° Camber 1° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 8 Gals.

Clutch Long **Facings** Moulded 7″ x 12″ x .137″ 2 Required

Gear Ratio Ring Gear 55 Pinion 12 Spiral Gears

Axle Timken Full-Floating

Brakes Mechanical Bendix

- **Front** 34″ x 2½″ x ¼″ Clearance Heel .014″ Toe .008″
- **Rear** 34″ x 2½″ x ¼″ Clearance Heel .014″ Toe .008″
- **Hand** 4 Wheels

Lining Moulded and Woven

Diagram 111

Lincoln   Models V-12-136 and V-12-145   Year 1934

Battery Exide **Type** LX-15-21L **Volts** 6 **Amps.** 148
Frame Connection Negative

Lighting Mazda 1116 **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 87 **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator **Max. Chg. Rate** 21 Amps. **Speed** 1250 R.P.M.
Regulation 3rd Brush **Cut-in** 7-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 18 MM. **Gap** .022″
Firing Order 1-4-9-8-5-2-11-10-3-6-7-12 See Diagram
Timing 7° B.T.C.

Engine **Bore** 3⅛″ **Stroke** 4½″ **Taxable H.P.** 46.80
Piston Ring—Width Oil 2—5/32″ Comp. 3—⅛″
Diam. 3⅛″ **Gap** .013″ on All
Oiling—Type Pump **Capacity** 11 Qts.

Valves **Intake Timing—Open** 21° B.T.C. **Close** 47° A.T.C.
Intake Clearance .003″
Exhaust Timing—Open 57° B.B.C. **Close** 11° A.T.C.
Exhaust Clearance .003″

Carburetor Stromberg

Steering Caster 2° Camber 1° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 8 Gals.

Clutch Long **Facings** Moulded 7″ x 12″ x .137″ 2 Required

Gear Ratio Ring Gear 55 Pinion 12 Spiral Gears

Axle Timken Full-Floating

Brakes Bendix Mechanical
- **Front** 34″ x 2½″ x ¼″ Clearance Heel .014″ Toe .008″
- **Rear** 34″ x 2½″ x ¼″ Clearance Heel .014″ Toe .008″
- **Hand** 4 Wheels

Lining Moulded and Woven

Lincoln Model V-12-136 Year 1933

Battery Exide **Type** LX-15-21L **Volts** 6 **Amps.** 148
Frame Connection Negative

Lighting Double Contact **Head Lights** 6-8, 32-32 C.P.
Single Contact **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 17.2 Amps. **Speed** 1400 R.P.M.
Regulation 3rd Brush **Cut-in** 7-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 7/8″—18 S.A.E. **Gap** .025″-.030″
Firing Order 1-4-9-8-5-2-11-10-3-6-7-12
Timing 7° Flywheel B.T.C. Full Advance

Engine **Bore** 3 1/4″ **Stroke** 4 1/2″ **Taxable H.P.** 50.70
Piston Ring—Width Oil 2—5/32″ Comp. 2—1/8″
Diam. 3 1/4″ **Gap** .008″ on All

Oiling—Type Pump **Capacity** 12 Qts.

Valves **Intake Timing—Open** 21° B.T.C. **Close** 47° A.B.C.
Intake Clearance .003″ Cold
Exhaust Timing—Open 57° B.B.C. **Close** 11° A.T.C.
Exhaust Clearance .005″ Cold

Carburetor Stromberg

Steering Caster 2° Camber 1° Toe-in 1/8″

Cooling System Centrifugal **Type** Pump **Capacity** 8 1/2 Gals.

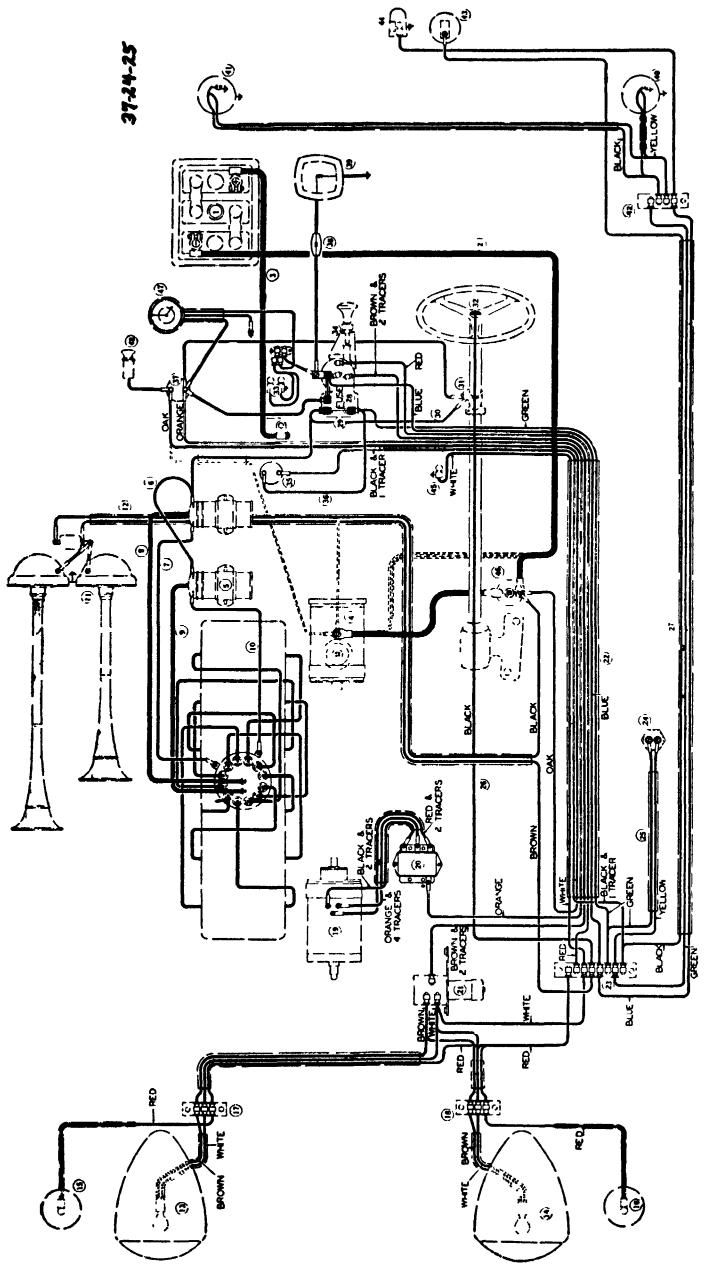
Clutch Long **Facing** Woven 6 1/4″ x 9 3/4″ x .137″ 4 Required

Gear Ratio Ring Gear 55 Pinion 12 Spiral Gears

Axle Timken Full-Floating

Brakes Bendix Booster Mechanical
- **Front** 34″ x 2 1/2″ x 1/4″ Clearance Heel .008″ Toe .014″
- **Rear** 34″ x 2 1/2″ x 1/4″ Clearance Heel .008″ Toe .014″
- **Hand** 4 Wheels

Lining Moulded and Woven



NASH AMBASSADOR WIRING DIAGRAM, 1937, 6-CYLINDER

Courtesy of Nash Motors Company

Nash Ambassador **Model 6-Cylinder** **Year 1937**

Battery U.S.L. **Type** **Volts** 6-8 **Amps.** 100
Frame Connection Positive

Lighting **Head Lights** 6-8, 32-32 C.P.
Double Contact **Stop Light** 6-8, 3 C.P. **Tail** 6-8, 21 C.P.
Parking Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 18 Amps. Hot **Speed** 2800 R.P.M., Arm.
Regulation **Cut-in** 7 Volts, 775 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 15° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4⅜″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—⅛″, 3/16″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** Oil .010″ Comp. .010″
Oiling—Type Gear Pump **Capacity** 7 Qts. **Pressure** 30 Lbs @20 M.P.H.

Valves **Intake Timing—Open** 13½° A.T.C. **Close** 36½° A.B.C.
Intake Clearance Hot .008″ Operating, .008″ Timing
Exhaust Timing—Open 47½° B.B.C. **Close** 7½° A.T.C.
Exhaust Clearance Hot .015″ Operating, .015″ Timing

Carburetor Stromberg EX2

Steering Caster 2½° Camber 1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

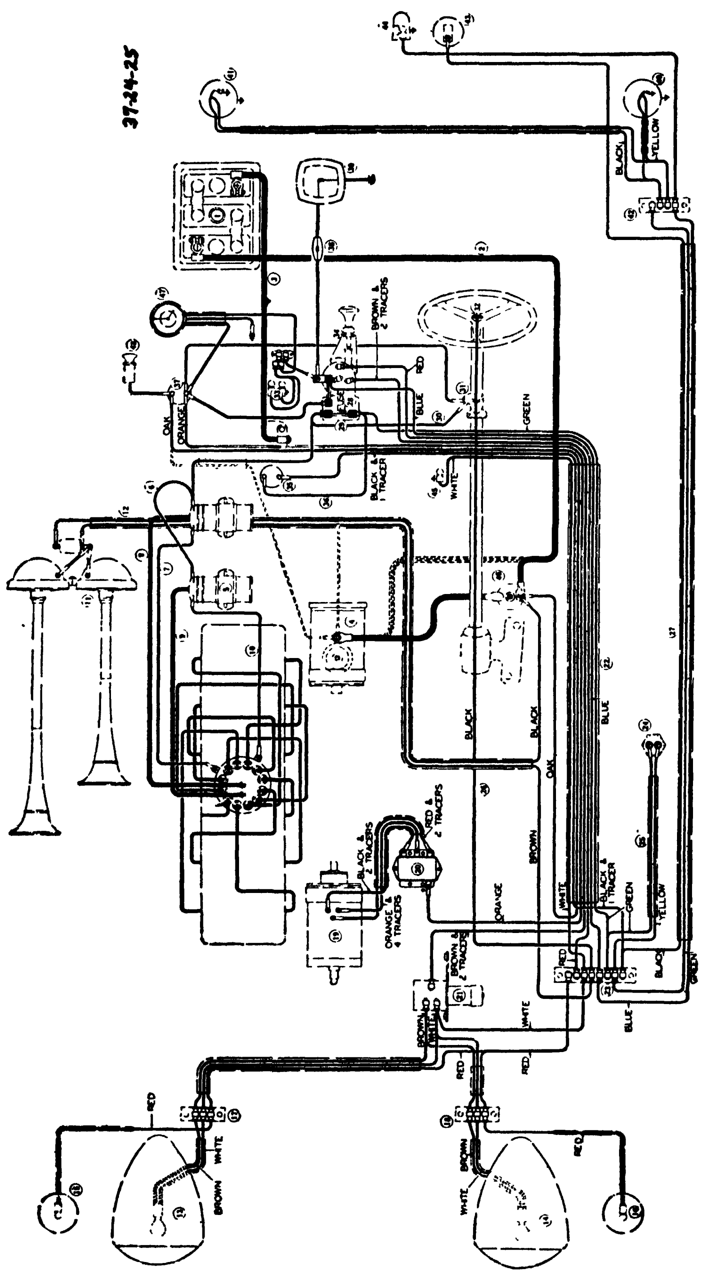
Clutch Borg & Beck **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 22 1/16″ x 2″ x 3/16″ Clearance .010″
Rear 22 1/16″ x 2″ x 3/16″ Clearance .010″
Hand Rear Service

Lining Moulded Diagram 37-24



NASH AMBASSADOR WIRING DIAGRAM, 1937, 8-CYLINDER
Courtesy of Nash Motors Company

Nash Ambassador   Model 8-Cylinder   Year 1937

Battery U.S.L. **Type** **Volts** 6-8 **Amps.** 116

Frame Connection Positive

Lighting

Head Lights 6-8, 32-32 C.P.

Double Contact **Stop Light** 6-8, 3 C.P. **Tail** 6-8, 21 C.P.

Parking Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite

Max. Chg. Rate 28 Amps. Hot **Speed** 1800 R.P.M., Arm.

Regulation Voltage and Current **Cut-in** 7 Volts, 850 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Auto-Lite

Contact Breaker Gap .013″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing 15° B.T.C.

Engine **Bore** 3⅛″ **Stroke** 4¼″ **Taxable H.P.** 33.80

Piston Ring—Width Oil 2—⅛″, 3/16″ Comp. 2—⅛″
Diam. 3⅛″ **Gap** Oil .010″ Comp. .010″

Oiling—Type Gear Pump **Capacity** 7 Qts.
Pressure 30 Lbs. @ 20 M.P.H.

Valves **Intake Timing—Open** 15° A.T.C. **Close** 38° A.B.C.

Intake Clearance Hot .008″ Operating, .008″ Timing

Exhaust Timing—Open 45° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance Hot .015″ Operating, .015″ Timing

Carburetor Stromberg EE7

Steering Caster 2° Camber 1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 21 Qts.

Clutch Borg & Beck **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Spiral Gears

Axle Own Semi-Floating

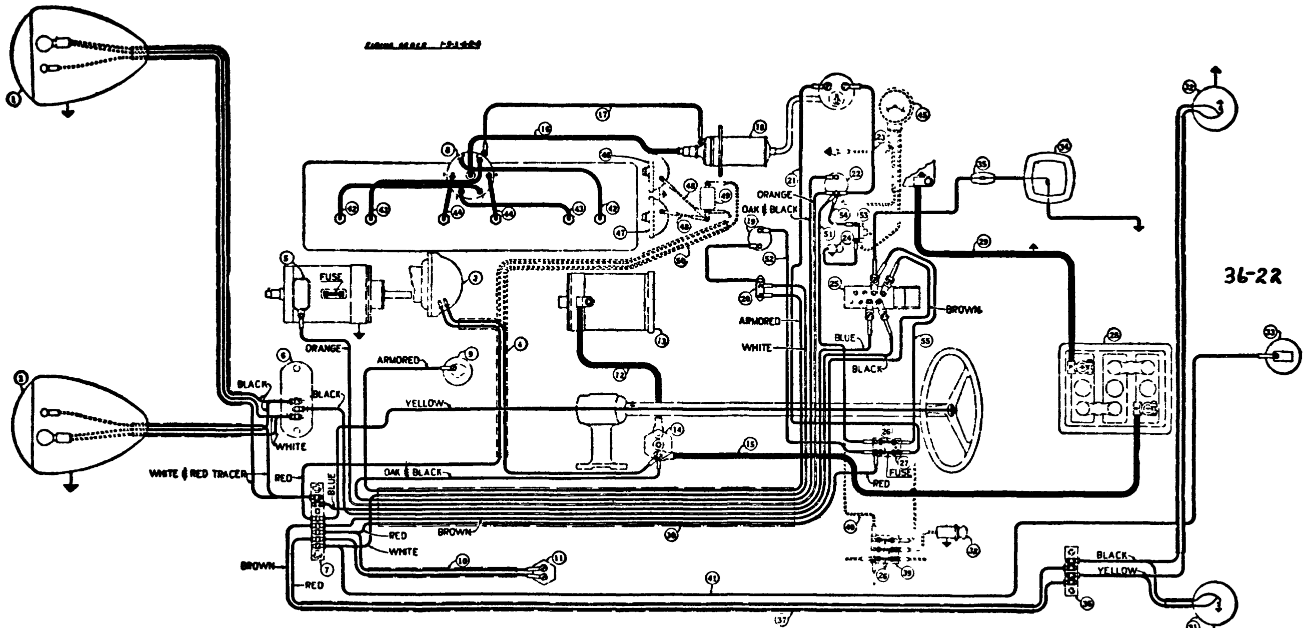
Brakes Bendix Hydraulic

Front 24″ x 2¼″ x 3/16″ Clearance .010″

Rear 24″ x 2¼″ x 3/16″ Clearance .010″

Hand Rear Service

Lining Moulded **Diagram** 37-25



NASH WIRING DIAGRAM, 1936, SERIES 3640A

Courtesy of Nash Motors Company

Nash **Model Series 3640A** **Year 1936**

Battery U.S.L. **Type** **Volts 6** **Amps. 120**

Frame Connection Negative

Lighting Pre-Focused Flange Type **Head Lights** 6-8, 32-21 C.P.

Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

Parking Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 14 Amps. Hot **Speed**

Regulation **Cut-in**

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 15° B.T.C. Retard

Engine **Bore** 3⅜″ **Stroke** 4⅜″ **Taxable H.P.** 27.34

Piston Ring—Width Oil Control ⅛″ and 3/16″ Comp. ⅛″
Diam. 3⅜″ **Gap** .010″-.025″

Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 13.5° A.T.C. **Close** 36.5° A.B.C.

Intake Clearance .015″

Exhaust Timing—Open 47.5° B.B.C. **Close** 7.5° A.T.C.

Exhaust Clearance .015″

Carburetor Stromberg EX2

Steering Caster 2° Camber 0°-1½° Toe-in ⅛″

Cooling System Pump **Type** Centrifugal **Capacity** 18 Qts.

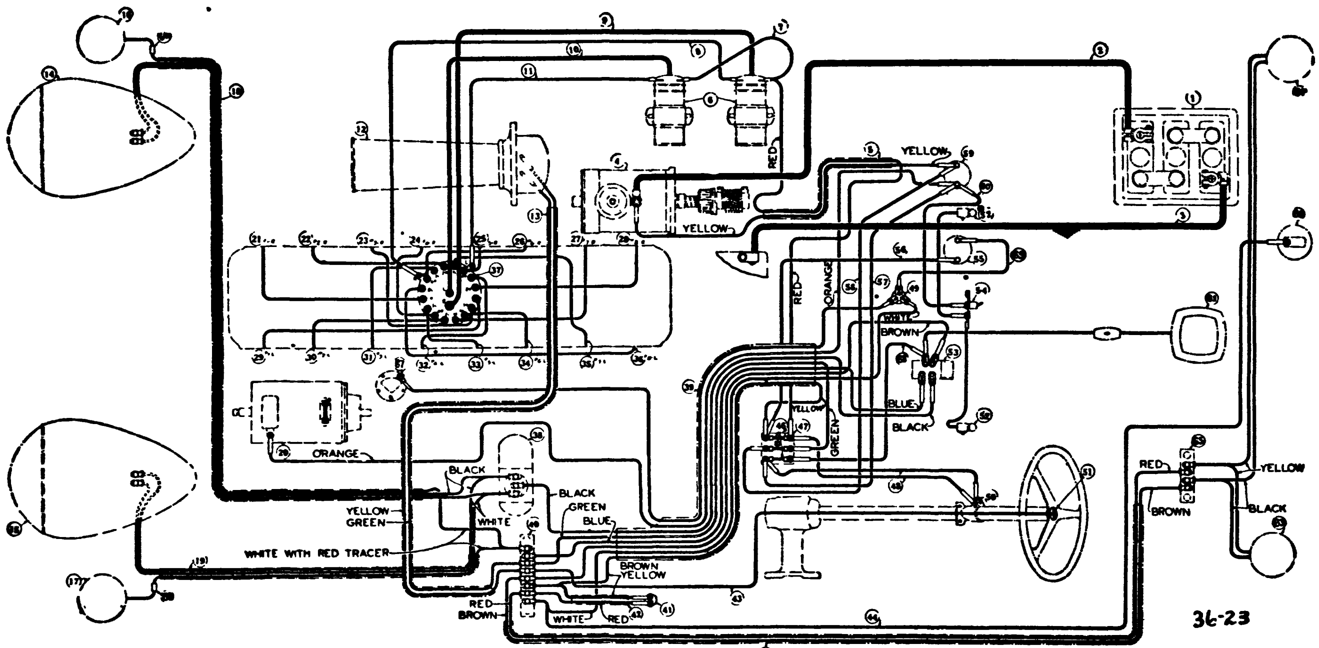
Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio 4.4 to 1 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 2 13/16″ x 1¾″ x 3/16″ Clearance .010″
Rear 2 13/16″ x 1¾″ x 3/16″ Clearance .010″
Hand Rear Wheels

Lining Moulded **Diagram 36-22**



NASH AMBASSADOR WIRING DIAGRAM, 1936, SERIES 3600

Courtesy of Nash Motors Company

Nash Ambassador **Model Series 3600** **Year 1936**

Battery U.S.L. **Type** **Volts 6** **Amps. 133**
Frame Connection Positive

Lighting **Head Lights** 6-8, 32-21 C.P.
Stop Light 6-8, 21 C.P. **Tail 6-8, 3 C.P.**
Parking Lights 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite — **Max. Chg. Rate** 14 Amps. Hot **Speed**
Regulation **Cut-in**
Relay Air Gap **Contact Gap**

Ignition Auto-Lite — **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 15° B.T.C. Retard

Engine **Bore** 3⅛″ **Stroke** 4¼″ **Taxable H.P.** 31.25
Piston Ring—Width Oil $\frac{3}{16}$″ Comp. ⅛″
Diam. 3⅛″ **Gap** .007″
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 15° A.T.C. **Close** 38° A.B.C.
Intake Clearance .015″
Exhaust Timing—Open 45° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .015″

Carburetor Stromberg EE22

Steering Caster 2½° Camber 1½° Toe-in ⅛″

Cooling System Pump **Type** Centrifugal **Capacity** 21 Qts.

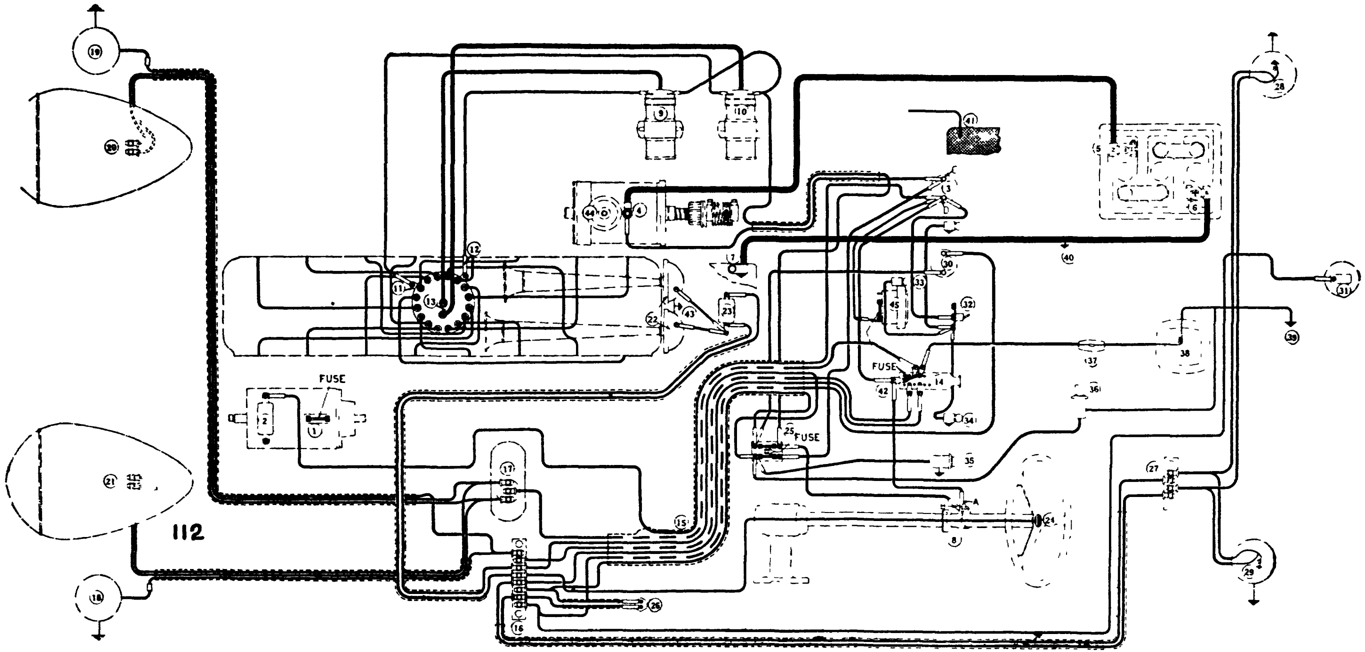
Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio 4.1 to 1

Axle Own Semi-Floating

Brakes Bendix Hydraulic
- **Front** $2\frac{13}{16}$″ x 2¼″ x $\frac{3}{16}$″ Clearance .010″
- **Rear** $2\frac{13}{16}$″ x 2¼″ x $\frac{3}{16}$″ Clearance .010″
- **Hand** Rear Wheels

Lining Moulded **Diagram 36-23**



NASH WIRING DIAGRAM, 1935, SERIES 3580 AND 3520

Courtesy of Nash Motors Company

Nash — Model Series 3580 and 3520 — Year 1935

Battery U.S.L. **Type** 3580, KW-15A; 3520, KW-13A **Volts** 3580, 6; 3520, 6 **Amps.** 3580, 133; 3520, 115

Frame Connection Positive

Lighting
Double Contact **Head Lights** 6-8, 21-32 C.P.
Single Contact **Dash, Tail and Stop** 6-8, 3-21 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 17 Amps. **Speed**
Regulation 3rd Brush **Cut-in** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 3580, 1-6-2-5-8-3-7-4; 3520, 1-5-3-6-2-4
Timing "IGN" Mark on Front Vibration Damper under Pointer

Engine **Bore** 3580, 3⅛″; 3520, 3⅜″ **Stroke** 3580, 4¼″; 3520, 4⅜″ **Taxable H.P.** 3580, 31.25; 3520, 27.34
Piston Ring—Width Oil 2 Comp. 2—⅛″ **Diam.** As Bore **Gap** .014″ on All
Oiling—Type Pump **Capacity** 3580, 8 Qts.; 3520, 7 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .015″ Hot
Exhaust Timing—Open **Close**
Exhaust Clearance .015″ Hot

Carburetor Stromberg 3580, EE22; 3520, EX32

Steering Caster 1° Camber 1½° Toe-in 0″-⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 3580, 21 Qts.; 3520, 17½ Qts.

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio Ring Gear 3580, 44; 3520, 40 Pinion 3580, 10; 3520, 9 Spiral Gears

Axle Own Semi-Floating

Brakes Hydraulic Bendix
Front 3580, 23$^{13}/_{32}$″ x 2¼″ x $^{5}/_{32}$″ Clearance .010″
3520, 23$^{13}/_{16}$″ x 1¾″ x $^{5}/_{32}$″ Clearance .010″
Rear As on Front
Hand Rear Service
Lining Moulded

Diagram 112

Nash Model Big 6, Series 1220 Year 1934

Battery U.S.L. **Type** KW-13A **Volts** 6 **Amps.** 96
Frame Connection Positive

Lighting Mazda 1116 **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Cold **Max. Chg. Rate** 20 Amps. **Speed** 2300 R.P.M.
Regulation 3rd Brush **Cut-in** 7.0-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

gnition **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .022″
Firing Order 1-5-3-6-2-4
Timing "IGN" on Vibration Damper to Pointer on Case

Engine **Bore** 3⅜″ **Stroke** 4⅜″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 1—⅛″, 1—3/16″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** 010″ on All
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .015″ Hot
Exhaust Timing—Open **Close**
Exhaust Clearance .015″ Hot

Carburetor Stromberg EX32

Steering Caster 2½° Camber 1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio Ring Gear 40 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 23¾″ x 1¾″
- **Rear** 23¾″ x 1¾″
- **Hand** 4 Wheels

Lining Moulded

Nash Model 8, Series 1280 Year 1934

Battery U.S.L. **Type** KW-15A **Volts** 6 **Amps** 115
Frame Connection Positive

Lighting Mazda 1116 **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Cold **Max. Chg. Rate** 20 Amps. **Speed** 2300 R.P.M.
Regulation 3rd Brush **Cut-in** 7.0-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .013″-.017″
Spark Plug—Size 14 MM. **Gap** .022″
Firing Order 1-6-2-5-8-3-7-4
Timing "IGN" on Vibration Damper to Pointer on Case

Engine **Bore** 3⅛″ **Stroke** 4¼″ **Taxable H.P.** 31.25
Piston Ring—Width Oil 1—⅛″, 1—3/16″ Comp. 2—⅛″
Diam. 3⅛″ **Gap** .010″ on All
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .015″ Hot
Exhaust Timing—Open **Close**
Exhaust Clearance .015″ Hot

Carburetor Stromberg EE22

Steering Caster 1½° Camber 1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 4⅜ Gals.

Clutch Borg & Beck **Facing** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 23⅛″ x 2¼″
- **Rear** 23⅛″ x 2¼″
- **Hand** 4 Wheels

Lining Moulded

Nash **Model Big 6-1120** **Year 1933**

Battery U.S.L. **Type** KW-13A **Volts** 6 **Amps.** 96
Frame Connection Negative

Lighting Double Contact **Head Lights** 6-8, 21-21 C.P.
Double Contact **Stop & Tail** 6-8, 21-2 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator **Max. Chg. Rate** 17 Amps. **Speed** 1700 R.P.M.
Regulation 3rd Brush **Cut-in** 7 0-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .018″-.020″
Spark Plug Size 18 M.M. **Gap** .022″
Firing Order—1-5-3-6-2-4
Timing 5° B.T.D.C.

Engine **Bore** 3-1/4″ **Stroke** 4-3/8″ **Taxable H.P.** 25.35
Piston Ring—Width 1-1/8″, 1-3/16″ 2-1/8″ **Diam.** 3-1/4″ **Gap**
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° A.T.C. **Close** 45° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg

Cooling System Centrifugal **Type** Pump **Capacity** 4-3/4 Gals.

Clutch Borg & Beck **Facing**—Moulded 9-7/8 x — x 1/8″

Gear Ratio Ring Gear 47 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Midland Mechanical
- **Front** Clearance .015″
- **Rear**
- **Hand** All 4 Wheels

Lining—Moulded

Nash **Model Standard 8-1130** **Year 1933**

Battery U.S.L. **Type** KW-13A **Volts** 6 **Amps.** 96
Frame Connection Negative

Lighting Double Contact **Head Lights** 6-8, 21-21 C.P.
Double Contact **Stop & Tail** 6-8, 21-2 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator **Max. Chg. Rate** 17 Amps. **Speed** 1700 R.P.M.
Regulation 3rd Brush **Cut-in** 7.0-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .020″-.022″
Spark Plug—Size 18 M.M. **Gap** .022″
Firing Order—1-6-2-5-8-3-7-4
Timing 5° B.T.D.C.

Engine **Bore** 3″ **Stroke** 4-3/8″ **Taxable H.P.** 28.20
Piston Ring—Width 1-1/8″, 1-3/16″, 2-1/8″ **Diam.** 3″ **Gap**
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° A.T.C. **Close** 45° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg

Cooling System Centrifugal **Type** Pump **Capacity** 4 Gals.

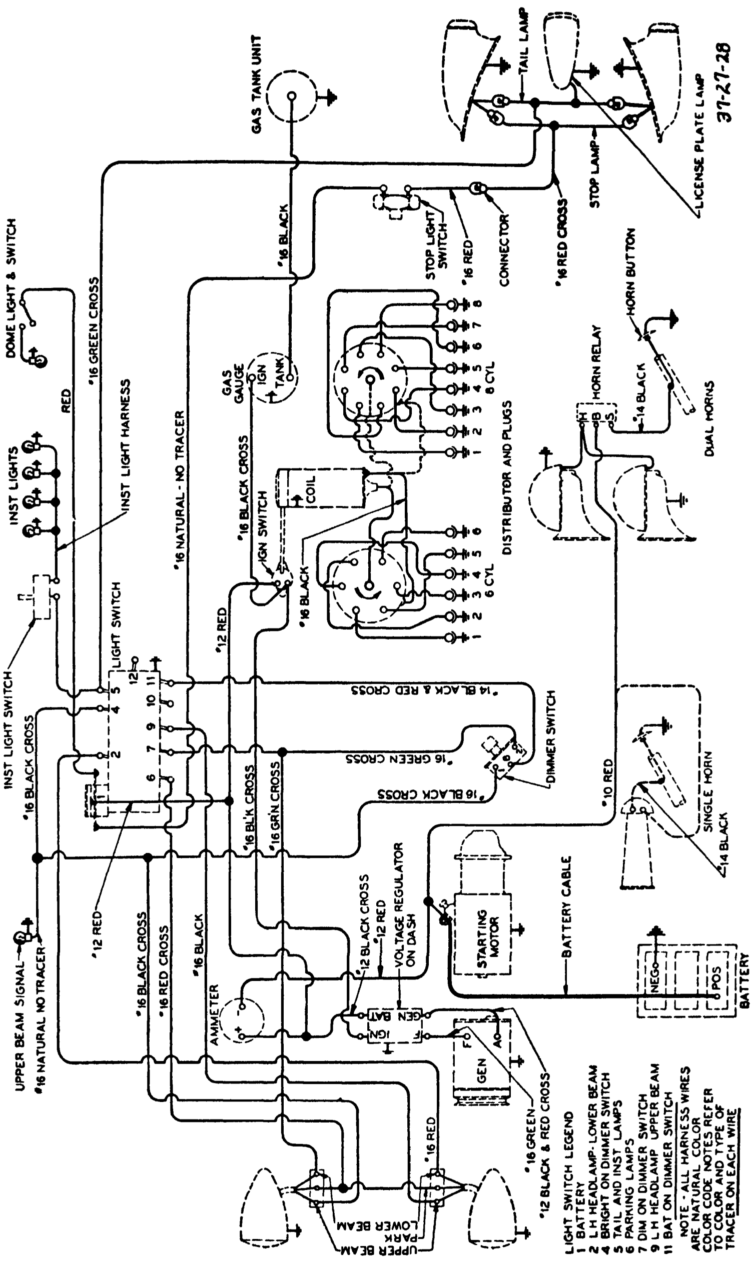
Clutch Borg & Beck **Facing**—Moulded 9-7/8″ x — x 1/8″

Gear Ratio Ring Gear 40 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Midland Mechanical
- **Front** **Clearance** .015″
- **Rear**
- **Hand** All 4 Wheels

Lining—Moulded



OLDSMOBILE WIRING DIAGRAM, 1937, 6-CYLINDER

Courtesy of Olds Motor Works

Oldsmobile **Model 6-Cylinder** **Year 1937**

Battery Delco-Remy **Type** **Volts 6-8** **Amps. 94**

Frame Connection Negative

Lighting T-2320 **Head Lights** 6-8, 21-32 C.P.
T-1154 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 3 C.P.
T-55 **Parking Lights** 6-8, 1½ C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 18 Amps. Hot **Speed** 3500 R.P.M., Arm.
Regulation Voltage **Cut-in** 6.5 Volts, 838 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .018″
Spark Plug—**Size** 14 M.M. **Gap** .030″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3$\frac{7}{16}$″ **Stroke** 4⅛″ **Taxable H.P.** 28.40
Piston Ring—**Width** Oil 2—$\frac{3}{16}$″ Comp. 2—⅛″
Diam. 3$\frac{7}{16}$″ **Gap** Oil 007″ Comp. .007″
Oiling—**Type** Gear Pump **Capacity** 6 Qts. **Pressure** 27 Lbs. Max.

Valves **Intake Timing**—**Open** 5° B.T.C. **Close** 45° A B C.
Intake Clearance Hot .008″ Operating, .008″ Timing
Exhaust Timing— **Open** 45 B B.C. **Close** 5° A.T.C.
Exhaust Clearance Hot .011″ Operating, .011″ Timing

Carburetor Carter 351S

Steering Caster ¼° Camber ⅛° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 16 Qts.

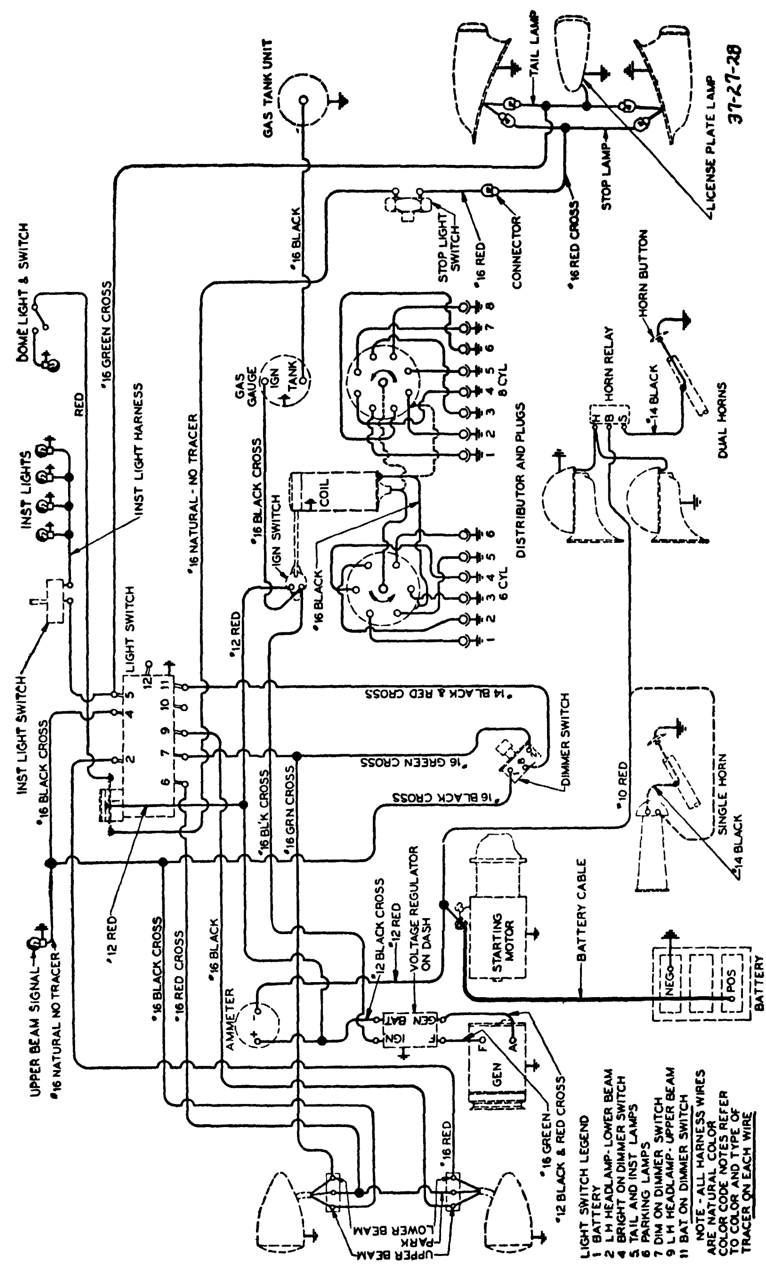
Clutch Borg & Beck **Facings** Woven 5⅝″ x 9¼″ x ⅛″ 2 Required

Gear Ratio Ring Gear 35 Pinion 8 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 21$\frac{5}{16}$″ x 1¾″ x $\frac{3}{16}$″ Clearance .010″
Rear 21$\frac{5}{16}$″ x 1¾″ x $\frac{3}{16}$″ Clearance .010″
Hand Rear Service

Lining Moulded and Woven **Diagram 37-27**



OLDSMOBILE WIRING DIAGRAM, 1937, 8-CYLINDER

Courtesy of Olds Motor Works

Oldsmobile **Model 8-Cylinder** **Year 1937**

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 110

Frame Connection Negative

Lighting T-2320 **Head Lights** 6-8, 21-32 C.P.

T-1154 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

T-55 **Parking Lights** 6-8, 1½ C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 18 Amps. Hot **Speed** 3500 R.P.M., Arm.
Regulation Voltage **Cut-in** 6.5 Volts, 800 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .013″
Spark Plug—Size 14 M.M. **Gap** .040″
Firing Order 1-6-2-5-8-3-7-4
Timing 2° B.T.C.

Engine **Bore** 3¼″ **Stroke** 3⅞″ **Taxable H.P.** 33.80

Piston Ring—Width Oil 2—3/16″ Comp. 2—⅛″
Diam. 3¼″ **Gap** Oil .007″ Comp. 009″

Oiling—Type Gear Pump **Capacity** 7 Qts. **Pressure** 27 Lbs. Max.

Valves **Intake Timing—Open** T.D.C. **Close** 35° A B.C.
Intake Clearance Hot .008″ Operating, .008″ Timing
Exhaust Timing—Open 45° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Hot .011″ Operating, .011″ Timing

Carburetor Carter 345S

Steering Caster ¼° Camber ⅛° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20 Qts.

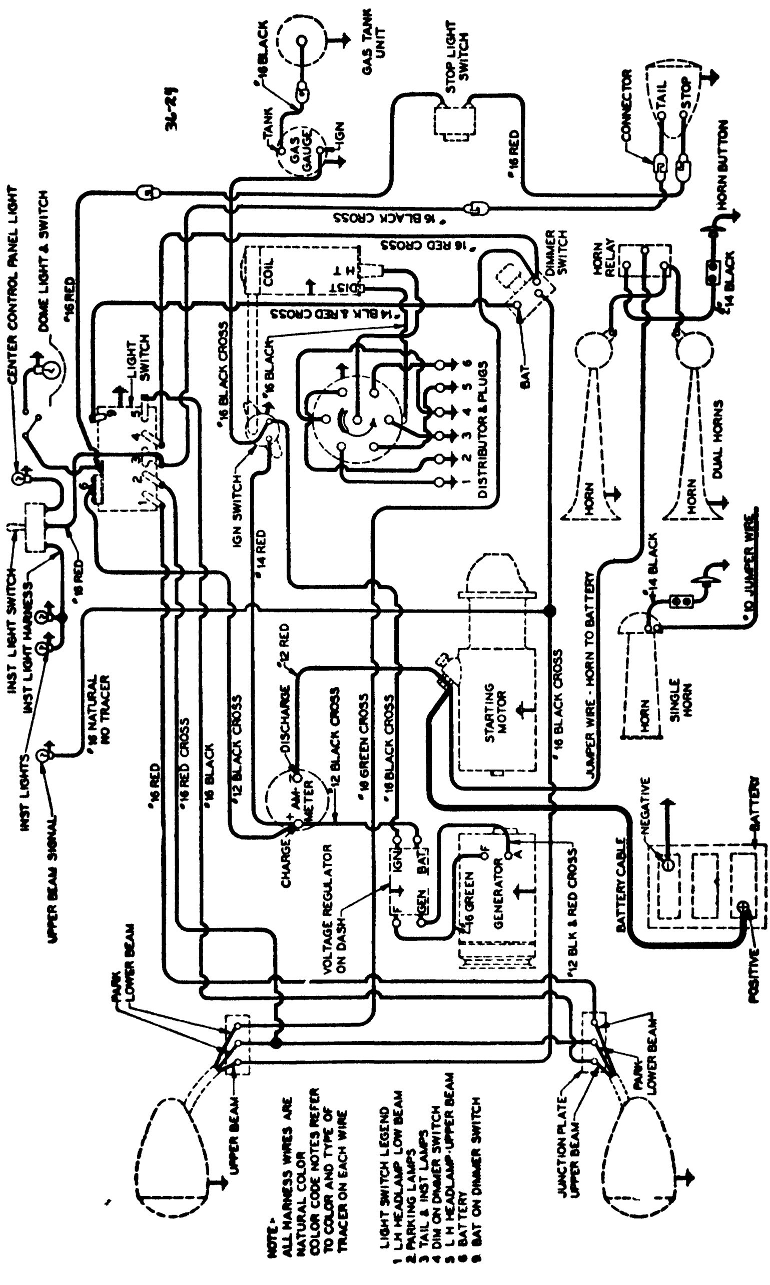
Clutch Borg & Beck **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio Ring Gear 35 Pinion 8 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 23″ x 1¾″ x 3/16″ Clearance .010″
Rear 23″ x 1¾″ x 3/16″ Clearance .010″
Hand Rear Service

Lining Moulded and Woven Diagram 37-28



OLDSMOBILE WIRING DIAGRAM, 1936, MODEL F-36

Courtesy of Olds Motor Works

Oldsmobile **Model F-36** **Year 1936**

Battery Delco **Type** 15-T **Volts** 6-8 **Amps.** 94

Frame Connection Negative

Lighting Mazda T-2320 L **Head Lights** 6-8, 32-21 C.P.

Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.

Parking Lights 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy — **Max. Chg. Rate** 21 Amps. Hot **Speed** 36 M.P.H.

Regulation 3rd Brush Non-Adjust. with Voltage Control **Cut-in** 6 Volts

Contact Gap .015″-.025″

Ignition Delco-Remy — **Contact Breaker Gap** .020″

Spark Plug—Size 18 M.M. **Gap** .030″-.033″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** 3 5/16″ **Stroke** 4 1/8″ **Taxable H.P.** 26.3

Piston Ring—Width Oil 2—.145″ Comp. 2—.148″
Diam. 3 5/16″ **Gap** Oil .007″-.015″ Comp. .007″-.012″

Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 225° A.T.C.

Intake Clearance .008″ Warm

Exhaust Timing—Open 135° A.T.C. **Close** 5° A.T.C.

Exhaust Clearance .010″ Warm

Carburetor Carter W1

Steering Caster 1 1/2° Camber 1/8° Toe-in 1/8″

Cooling System Centrifugal **Type** Pump **Capacity** 12.5 Qts.

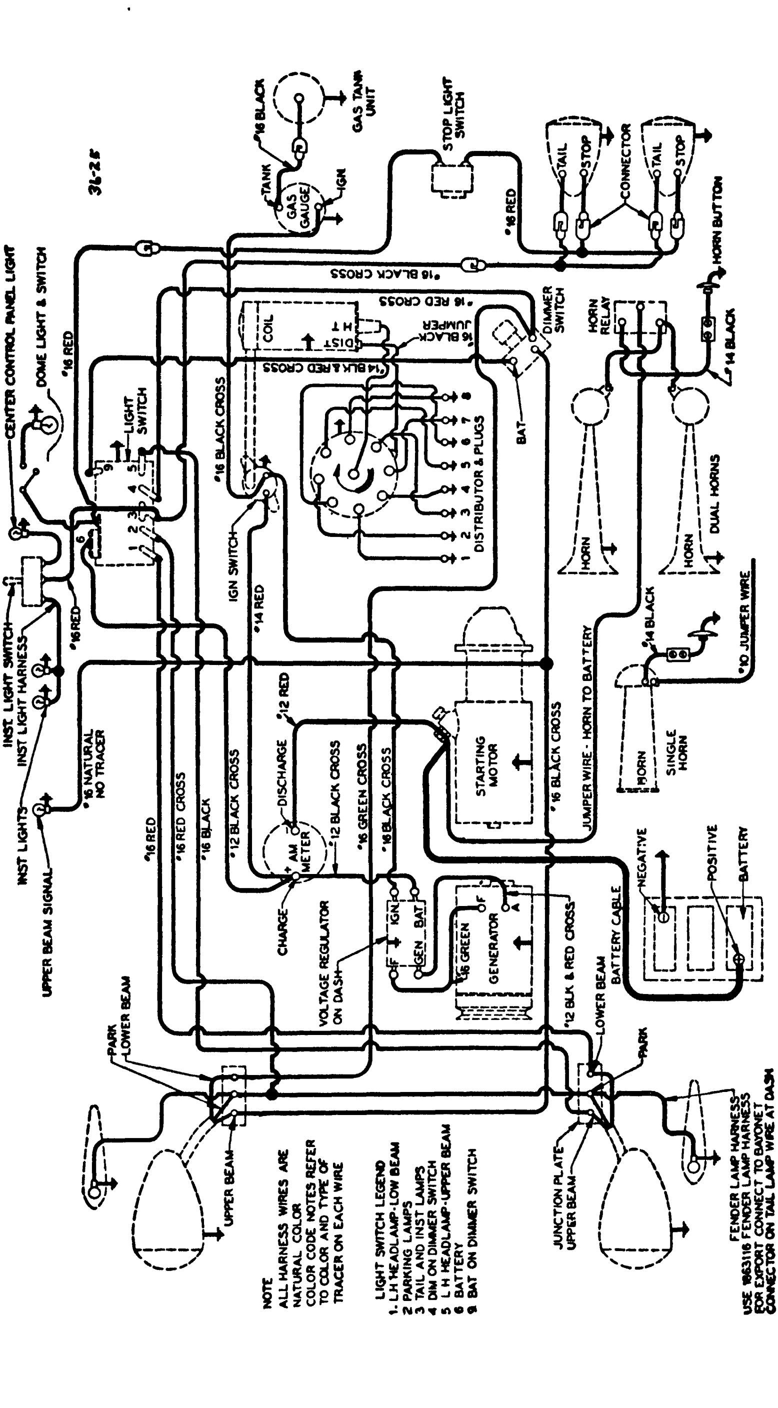
Clutch Borg & Beck **Facings** Woven 5 5/8″ x 9″ x .133″ 2 Required

Gear Ratio 4.55 to 1 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 23 3/4″ x 2″ x 5/16″ Clearance .010″
- **Rear** 23 3/4″ x 2″ x 5/16″ Clearance .010″
- **Hand** Rear Service

Lining Moulded and Woven **Diagram** 36-24



OLDSMOBILE WIRING DIAGRAM, 1936, MODEL L-36

Courtesy of Olds Motor Works

Oldsmobile **Model L-36** **Year 1936**

Battery Delco **Type** 17-K **Volts** 6-8 **Amps.** 110
Frame Connection Negative

Lighting Mazda T-2320-L **Head Lights** 6-8, 32-31 C.P.
Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 21 Amps. Hot **Speed** 38 M.P.H.
Regulation 3rd Brush Non-Adjust. with Voltage Control **Cut-in** 6 Volts
Contact Gap .015″-.025″

Ignition Delco-Remy
Contact Breaker Gap .015″
Spark Plug—Size 18 M.M. **Gap** .030″-.033″
Firing Order 1-6-2-5-8-3-7-4
Timing .002″ B.T.C. Piston Movement

Engine **Bore** 3″ **Stroke** 4¼″ **Taxable H.P.** 28.8
Piston Ring—Width Oil 2—.125″ Comp. 2—.138″
Diam. 3″ **Gap** Oil .007″-.015″ Comp. .007″-.012″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 222° A.T.C.
Intake Clearance .008″ Warm
Exhaust Timing—Open 140° A.T.C. **Close** 10° A.T.C.
Exhaust Clearance .010″ Warm

Carburetor Carter WD-0

Steering Caster 1½° Camber ⅛° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 16 Qts.

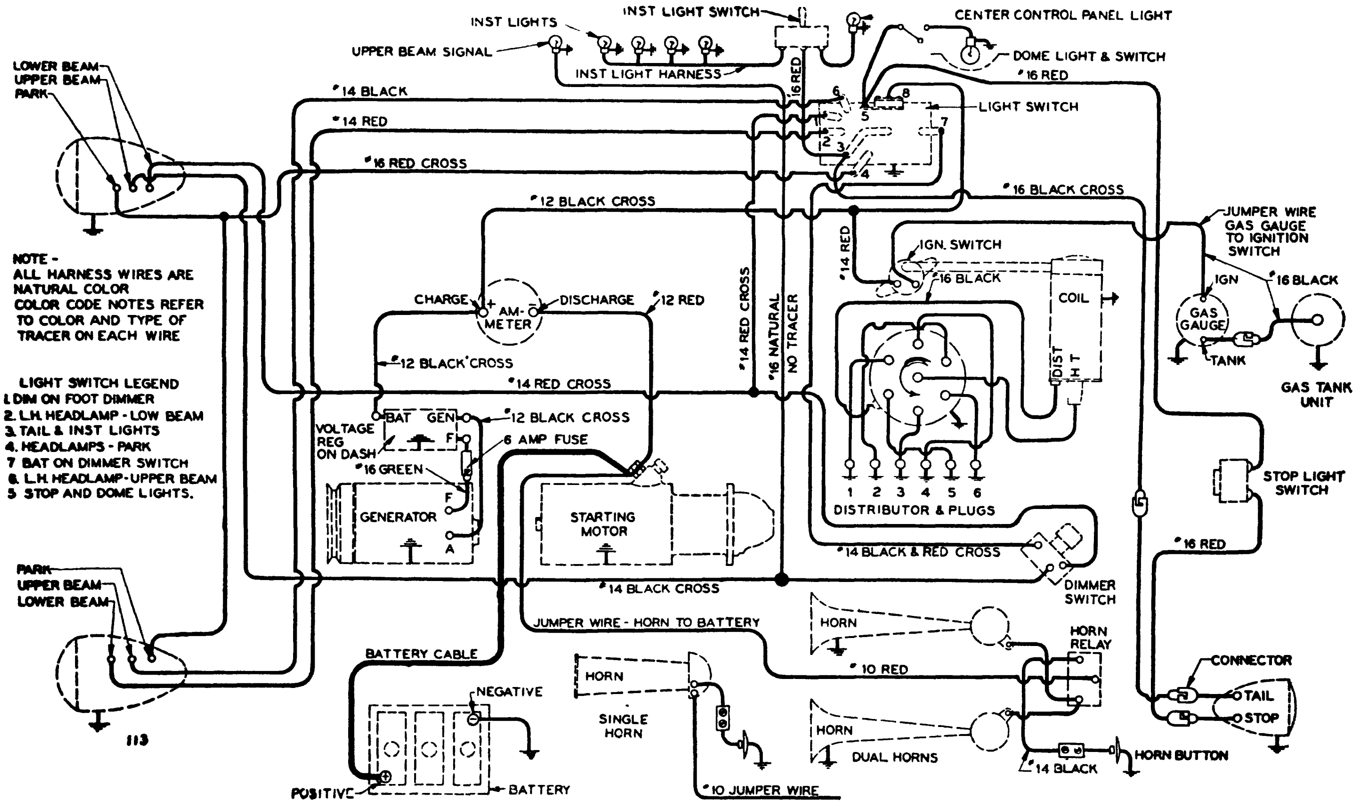
Clutch Borg & Beck **Facings** Woven 6⅛″ x 9⅞″ x .125″ 2 Required

Gear Ratio 4.55 to 1 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 26″ x 2″ x 3/16″ Clearance .010″
- **Rear** 26″ x 2″ x 3/16″ Clearance .010″
- **Hand** Rear Service

Lining Moulded and Woven **Diagram** 36-25



OLDSMOBILE WIRING DIAGRAM, 1935, MODEL F-35, 6-CYLINDER

Courtesy of Olds Motor Works

Oldsmobile Model F35, 6-Cylinder Year 1935

Battery Delco-Remy **Type** 15T **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting Mazda 2320 **Head Lights** 6-8, 32-21 C.P.
Mazda 51, 63, 87 **Dash, Tail and Stop** 6-8, 1-3-15 C.P.
Mazda 55 **Side Lights** 6-8, 1½ C.P.

Starter and Generator Delco-Remy

Generator Cold **Max. Chg. Rate** 22 Amps. **Speed**
Regulation 3rd Brush **Cut-in** 6.7-7.5 Volts
Relay Air Gap **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .022″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 2° B.T.C. Retard

Engine **Bore** 3 5/16″ **Stroke** 4⅛″ **Taxable H.P.** 26.3
Piston Ring—Width Oil 1—3/16″ Comp. 2—⅛″
Diam. 3 5/16″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 225° A.T.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open .135° A.T.C. **Close** 5° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Stromberg EX22

Steering Caster 1½° Caster ⅛° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 13 Qts.

Clutch Borg & Beck **Facings** Woven 5⅝″ x 9″ x .133″ 2 Required

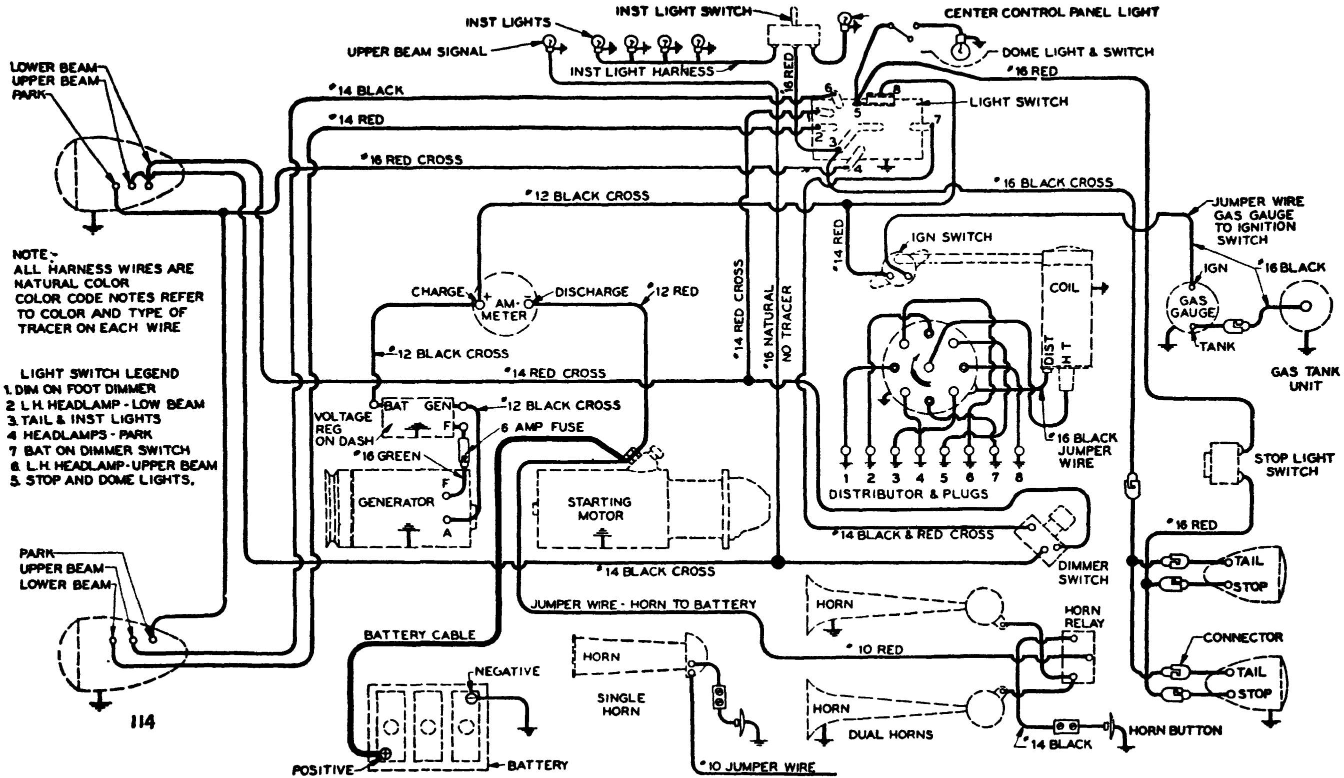
Gear Ratio Ring Gear 40 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Hydraulic Bendix
- **Front** 23¾″ x 2″ x 3/16″ Clearance Anchor .008″ Screw .010″
- **Rear** 23¾″ x 2″ x 3/16″ Clearance Anchor .008″ Screw .010″
- **Hand** Rear Service

Lining Moulded and Woven

Diagram 113



OLDSMOBILE WIRING DIAGRAM, 1935, MODEL L-35, 8-CYLINDER

Courtesy of Olds Motor Works

Oldsmobile Model L35, 8-Cylinder Year 1935

Battery Delco-Remy **Type** 17K **Volts** 6 **Amps.** 114
Frame Connection Negative

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 51, 63, 87 **Dash, Tail & Stop** 6-8, 1-3-15 C.P.
Mazda 55 **Side Lights** 6-8, 1½ C.P.

Starter and Generator Delco-Remy

Generator Cold **Max. Chg. Rate** 22 Amps. **Speed**
Regulation 3rd Brush **Cut-in** 6.7-7.5 Volts
Relay Air Gap **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .022″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 3° B.T.C. Retard

Engine **Bore** 3″ **Stroke** 4¼″ **Taxable H.P.** 28.8
Piston Ring—Width Oil 1—⅛″, 1—³⁄₁₆″ Comp. 2—⅛″
Diam. 3″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 222° A.T.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 140° A.T.C. **Close** 10° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg EE1

Steering Caster 1½° Camber ¼° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 16 Qts.

Clutch Borg & Beck **Facings** Woven 6⅛″ x 9⅞″ x .133″

Gear Ratio Ring Gear 40 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Hydraulic Bendix
- **Front** 25¹⁵⁄₁₆″ x 2″ x ³⁄₁₆″ Clearance Anchor .008″ Screw .010″
- **Rear** 25¹⁵⁄₁₆″ x 2″ x ³⁄₁₆″ Clearance Anchor .008″ Screw .010″
- **Hand** Rear Service

Lining Moulded and Woven

Diagram 114

Oldsmobile Model F-34, 6-Cylinder Year 1934

Battery Delco **Type** 15-RW **Volts** 6 **Amps.** 94
Frame Connection Negative

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63 **Dash and Tail** 6-8, 3 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13-15 Amps. **Speed** 3000 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .022″
Spark Plug—Size 18 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3 5/16″ **Stroke** 4 1/8″ **Taxable H.P.** 26.3
Piston Ring—Width Oil 1—.1865″ Comp. 2—.124″
Diam. 3 5/16″ **Gap** .009″ on All
Oiling—Type **Capacity**

Valves **Intake Timing—Open** T.D.C. **Close** 50° A.B.C.
Intake Clearance .007″ Hot
Exhaust Timing—Open 40° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .009″ Hot

Carburetor Stromberg EX23

Steering Caster 3° Camber 1° Toe-in 3/16″

Cooling System Centrifugal **Type** Pump **Capacity** 3 3/4 Gals.

Clutch Borg & Beck **Facings** Moulded 5 3/4″ x 9″ x 1/8″ 2 Required

Gear Ratio Ring Gear 41 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 23 3/4″ x 1 3/4″ x 5/32″ Clearance Heel .010″ Toe .008″
Rear 23 3/4″ x 1 3/4″ x 5/32″ Clearance Heel .010″ Toe .008″
Hand Rear Service
Lining Moulded

Oldsmobile Model L-34, 8-Cylinder Year 1934

Battery Delco **Type** 17-GW **Volts** 6 **Amps.** 107
Frame Connection Negative

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63 **Dash and Tail** 6-8, 3 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13-15 Amps. **Speed** 3000 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .022″
Spark Plug—Size 18 MM. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing "IGN" on Vibration Damper to Pointer on Case

Engine **Bore** 3″ **Stroke** 4¼″ **Taxable H.P.** 28.8
Piston Ring—Width Oil 1—⅛″, 1—3/16″ Comp. 2—⅛″
Diam. 3″ **Gap** .007″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.
Intake Clearance .007″ Hot
Exhaust Timing—Open 40° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .009″ Hot

Carburetor Stromberg EE1

Steering Caster 2° Camber 1° Toe-in 3/16″

Cooling System Centrifugal **Type** Pump **Capacity** 4¾ Gals.

Clutch Borg & Beck **Facings** Moulded 6⅛″ x 9⅞″ x ⅛″ 2 Required

Gear Ratio Ring Gear 43 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
- **Front** 25 29/32″ x 1¾″ x 3/16″ Clearance Heel .010″ Toe .008″
- **Rear** 25 29/32″ x 1¾″ x 3/16″ Clearance Heel .010″ Toe .008″
- **Hand** Rear Service

Lining Moulded

Oldsmobile **Model F-33** **Year 1933**

Battery Delco **Type** 13-L-CU **Volts** 6 **Amps.** 86

Frame Connection Negative

Lighting Double Contact **Head Lights** 6-8, 32-21 C.P.

Single Contact **Dash & Tail** 6-8, 3-15 C.P. **Stop** 15 C.P.

Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 9-12 Amps. **Speed** 1800-2000 R.P.M.

Regulation 3rd Brush, Thermo. **Cut-in** 6 75-7.5 Volts

Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″

Spark Plug—Size — 18 M.M. **Gap** .025″

Firing Order—1-5-3-6-2-4

Timing 3-1/2° B.T.D.C.

Engine **Bore** 3-3/8″ **Stroke** 4-1/8″ **Taxable H.P.** 27.34

Piston Ring—Width 1-3/16″, 2-1/8″ **Diam.** 3-3/8″ **Gap** All Rings .007″

Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** At T.D.C. **Close** 50° A.B.C

Intake Clearance .007″ Hot

Exhaust Timing—Open 40° B.B.C. **Close** 10 A.T.C.

Exhaust Clearance .009″ Hot

Carburetor Stromberg EC22

Cooling System Centrifugal **Type** Pump **Capacity** 4-1/4 Gals.

Clutch Borg & Beck **Facing**—Moulded 9-7/8″ x 6-1/8″ x 1/8″

Gear Ratio Ring Gear 41 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 25-29/32″ x 1-3/4″ x 3/16″ Clearance .010″
- **Rear** 25-29/32″ x 1-3/4″ x 3/16″ Clearance .010″
- **Hand** All 4 Wheels

Lining—Moulded

Oldsmobile Model 8 Cylinder L-33 Year 1933

Battery Delco **Type** 13J-CU **Volts** 6 **Amps.** 98
Frame Connection Negative

Lighting Double Contact **Head Lights** 6-8, 32-21 C.P.
Single Contact **Dash & Tail** 6-8, 3-15 C.P. **Step** 15 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 9-12 Amps. **Speed** 1800-2000 R.P.M.
Regulation 3rd Brush, Thermo. **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order—1-6-2-5-8-3-7-4
Timing 3-1/2° B.T.D.C.

Engine **Bore** 3-1/4″ **Stroke** 4-1/4″ **Taxable H. P.** 28.8
Piston Ring—Width 1-1/8″, 1-3/16″, 2-1/8″ **Diam.** 3-1/4″
Gap All Rings .007″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** At T.D.C. **Close** 42° A.B.C.
Intake Clearance .007″ Hot
Exhaust Timing—Open 40° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .009″ Hot

Carburetor Stromberg EE22

Cooling System Centrifugal **Type** Pump **Capacity** 4-1/4 Gals.

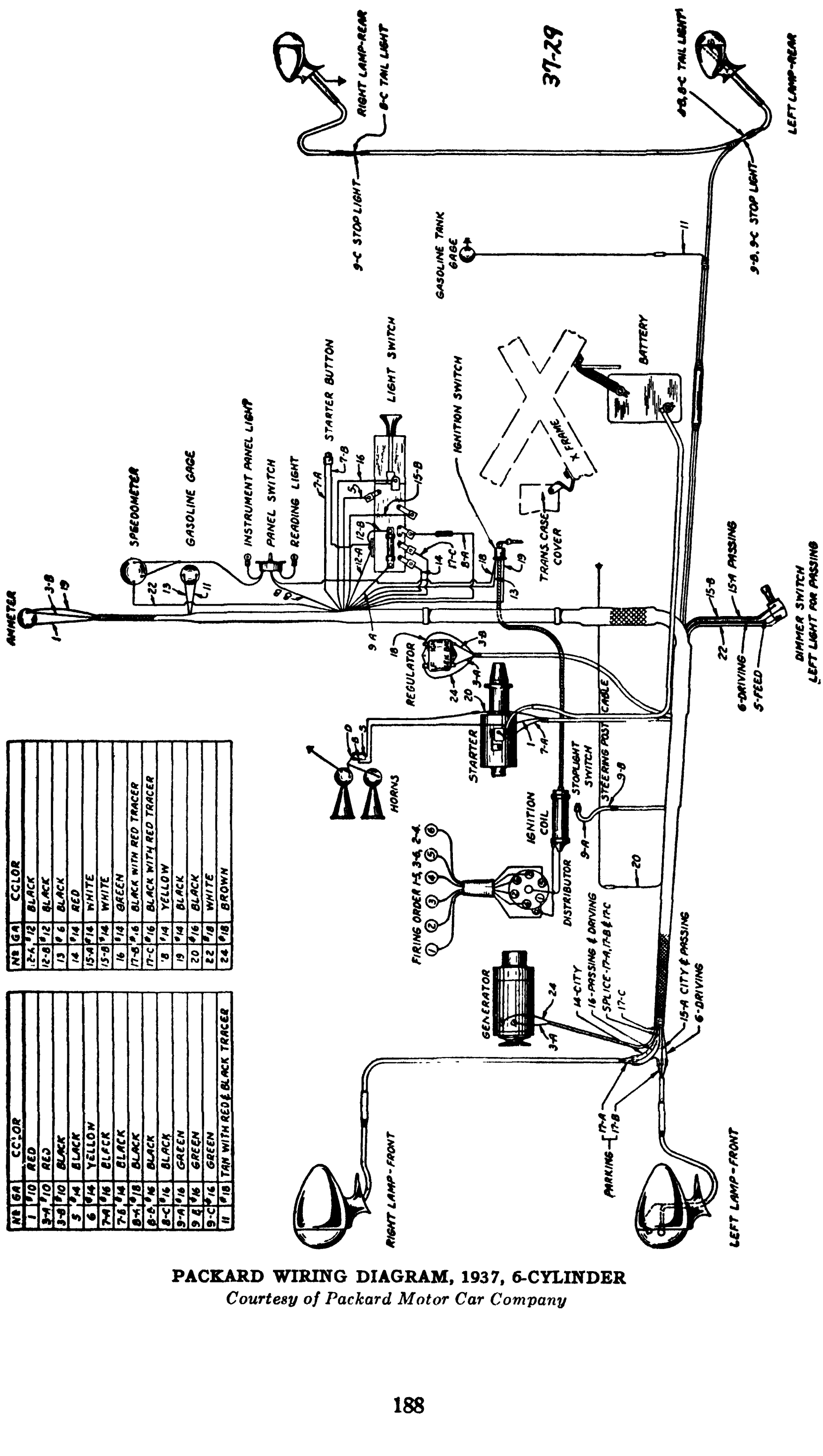
Clutch Borg & Beck **Facing**—Moulded 9-7/8″ x 6-1/8″ x 1/8″

Gear Ratio Ring Gear 41 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 25-29/32″ x 1/3-4″ x 3/16″ Clearance 010″
- **Rear** 25-29/32″ x 1-3/4″ x 3/16″ Clearance .010″
- **Hand** All 4 Wheels

Lining—Moulded



Nº	GA	COLOR
1	#10	RED
3-A	#10	RED
3-B	#10	BLACK
5	#14	BLACK
6	#14	YELLOW
7-A	#16	BLFCK
7-B	#14	BLACK
8-A	#18	BLACK
8-B	#16	BLACK
8-C	#16	BLACK
9-A	#16	GREEN
9-B	#16	GREEN
9-C	#16	GREEN
11	#18	TAN WITH RED & BLACK TRACER

Nº	GA	COLOR
12-A	#12	BLACK
12-B	#12	BLACK
13	# 6	BLACK
14	#14	RED
15-A	#14	WHITE
15-B	#14	WHITE
16	#14	GREEN
17-B	#16	BLACK WITH RED TRACER
17-C	#16	BLACK WITH RED TRACER
18	#14	YELLOW
19	#14	BLACK
20	#16	BLACK
22	#18	WHITE
24	#18	BROWN

PACKARD WIRING DIAGRAM, 1937, 6-CYLINDER

Courtesy of Packard Motor Car Company

Packard **Model 6-Cylinder** **Year 1937**

Battery Willard **Type** **Volts 6-8** **Amps. 94**

Frame Connection Positive

Lighting **Head Lights** 6-8 Volts

Stop Light 6-8 Volts **Tail 6-8 Volts**

Parking Lights 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy — **Max. Chg. Rate** 18 Amps. Hot **Speed 3500** R.P.M., **Arm.**

Regulation Voltage **Cut-in** 6.5 Volts, 710 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Delco-Remy — **Contact Breaker Gap** .018″

Spark Plug—Size 10 M.M. **Gap** .028″

Firing Order 1-5-3-6-2-4

Timing 4° B.T.C.

Engine **Bore** 3 7/16″ **Stroke** 4 1/4″ **Taxable H.P.** 28.36

Piston Ring—Width Oil 1—3/16″ Comp. 2—1/8″ **Diam.** 3 7/16″ **Gap** Oil .007″ Comp. .007″

Oiling—Type Gear Pump **Capacity** 7 Qts. **Pressure** 35 Lbs.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.

Intake Clearance Hot .007″

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance Hot .010″

Carburetor Chandler-Groves AOC2

Steering Caster 2° Camber 1° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Clutch Long **Facings** Woven 6″ x 9 1/2″ x 1/8″ 2 Required

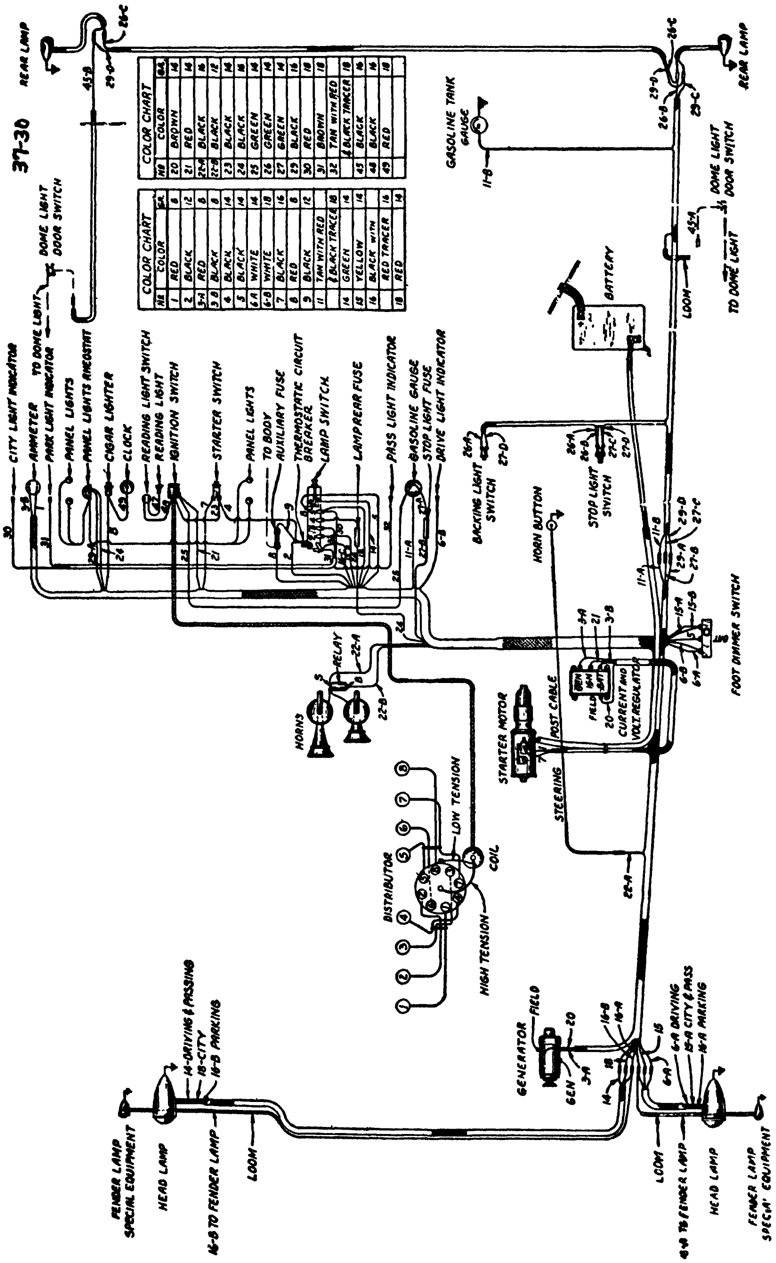
Gear Ratio Ring Gear 48 Pinion 11 Hypoid Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic

- **Front** 26″ x 1 3/4″ x 3/16″ Clearance .010″
- **Rear** 26″ x 1 3/4″ x 3/16″ Clearance .010″
- **Hand** Rear Service

Lining **Diagram 37-29**



PACKARD WIRING DIAGRAM, 1937, MODEL SUPER 8

Courtesy of Packard Motor Car Company

Packard Model Super 8 Year 1937

Battery Various Makes **Type** **Volts** 6-8 **Amps.** 150
Frame Connection Positive

Lighting **Head Lights** 6-8 Volts
Stop Light 6-8 Volts **Tail** 6-8 Volts
Parking Lights 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 25 Amps. Hot **Speed** 1650 R.P.M., Arm.
Regulation Volt. & Current **Cut-in** 6.5 Volts, 800 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .013″
Spark Plug—Size 10 M.M. **Gap** .028″
Firing Order 1-6-2-5-8-3-7-4
Timing 6° B.T.C.

Engine **Bore** 3$\frac{3}{16}$″ **Stroke** 5″ **Taxable H.P.** 32.50
Piston Ring—Width Oil 2—$\frac{5}{32}$″ Comp. 2—$\frac{1}{8}$″
Diam. 3$\frac{3}{16}$″ **Gap** Oil .007″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 8 Qts. **Pressure** 35 Lbs.

Valves **Intake Timing—Open** 30° B.T.C. **Close** 65° A.B.C.
Intake Clearance Hot .004″
Exhaust Timing—Open 65° B.B.C. **Close** 30° A.T.C.
Exhaust Clearance Hot .006″

Carburetor Stromberg EE23

Steering Caster 2° Camber 1° Toe-in $\frac{1}{16}$″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 24 Qts.

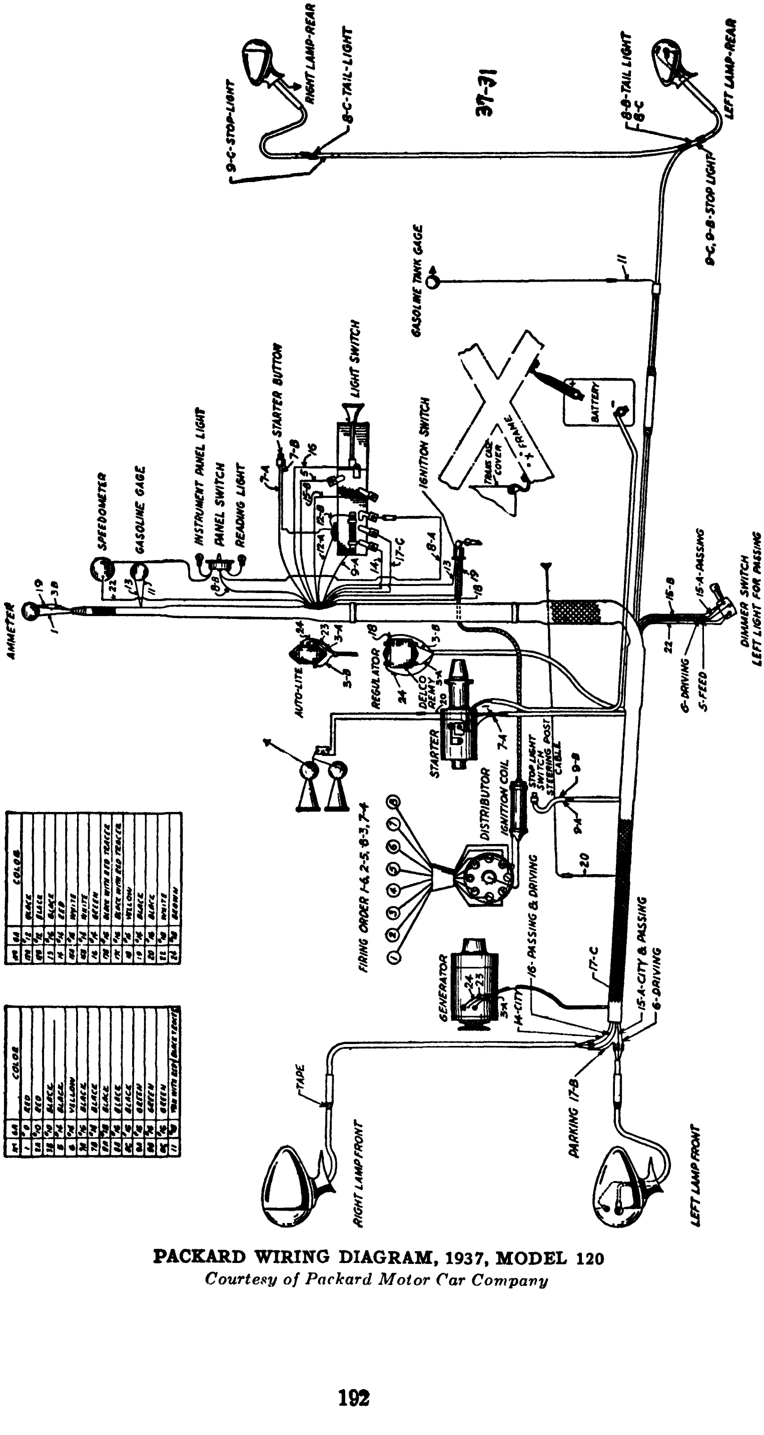
Clutch Long **Facings** Moulded 7″ x 12″ x .137″ 2 Required

Gear Ratio Ring Gear 61 Pinion 14 Hypoid Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 26″ x 2½″ x $\frac{3}{16}$″ Clearance .010″
Rear 26″ x 2½″ x $\frac{3}{16}$″ Clearance .010″
Hand Rear Service

Lining Diagram 37-30



PACKARD WIRING DIAGRAM, 1937, MODEL 120

Courtesy of Packard Motor Car Company

Packard **Model 120** **Year 1937**

Battery Various Makes **Type** **Volts 6-8** **Amps. 114**
Frame Connection Positive

Lighting **Head Lights** 6-8 Volts
Stop Light 6-8 Volts **Tail 6-8 Volts**
Parking Lights 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 22 Amps. Hot **Speed** 2500 R.P.M., Arm.
Regulation Voltage and Current **Cut-in** 7 Volts, 750 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .013″
Spark Plug—Size 10 M.M. **Gap** .028″
Firing Order 1-6-2-5-8-3-7-4
Timing 7° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4¼″ **Taxable H.P.** 33.80
Piston Ring—Width Oil 1—3/16″ Comp. 2—⅛″
Diam. 3¼″ **Gap** Oil .007″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 7 Qts. **Pressure** 35 Lbs.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C
Intake Clearance Hot .007″
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance Hot .010″

Carburetor Stromberg EE14

Steering Caster 2° Camber 1° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20 Qts.

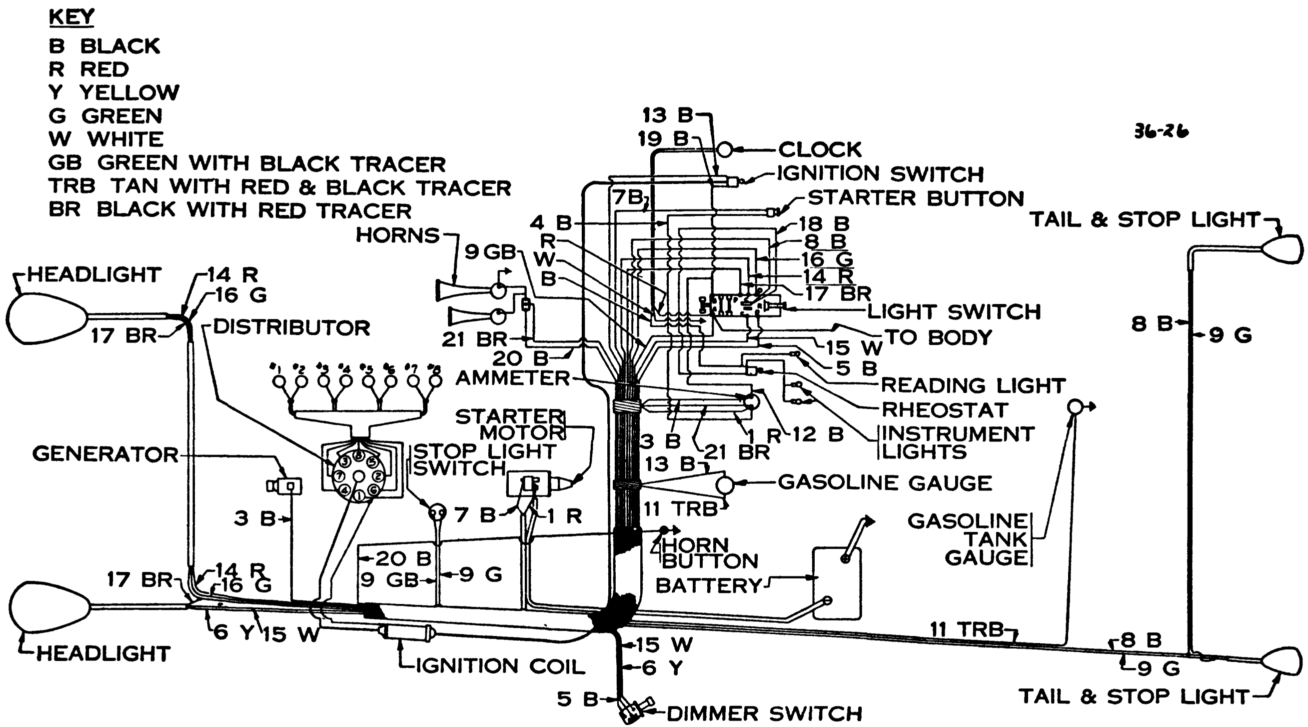
Clutch Long **Facings** Woven 6″ x 10″ x .137″ 2 Required

Gear Ratio Ring Gear 45 Pinion 11 Hypoid Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
- **Front** 26″ x 1¾″ x 3/16″ Clearance .010″
- **Rear** 26″ x 1¾″ x 3/16″ Clearance .010″
- **Hand** Rear Service

Lining Diagram 37-31



PACKARD WIRING DIAGRAM, 1936, MODEL 120
Courtesy of Packard Motor Car Company

Packard Model 120 Year 1936

Battery Delco-Remy **Type** **Volts** 6 **Amps.** 110
Frame Connection Positive

Lighting **Head Lights** 6-8, 32-32 C.P.
Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 1 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 20 Amps. Hot **Speed**
Regulation 3rd Brush and Voltage Control **Cut-in** 7-7¼ Volts
Contact Gap

Ignition **Contact Breaker Gap** .018″-.022″
Spark Plug—Size 14 M.M. **Gap** .028″
Firing Order 1-6-2-5-8-3-7-4
Timing 7° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4¼″ **Taxable H.P.** 33.8
Piston Ring—Width Oil 3/16″ **Comp.** ⅛″
Diam. 3¼″ **Gap Oil** .007″-.015″ **Comp.** .007″-.012″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .007″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Stromberg EE14

Steering Caster 2° Camber 1° Toe-in ⅛″

Cooling System Pump **Type** Centrifugal **Capacity** 18 Qts.

Clutch Long **Facings** Woven 6″ x 10″ x .137″ 2 Required

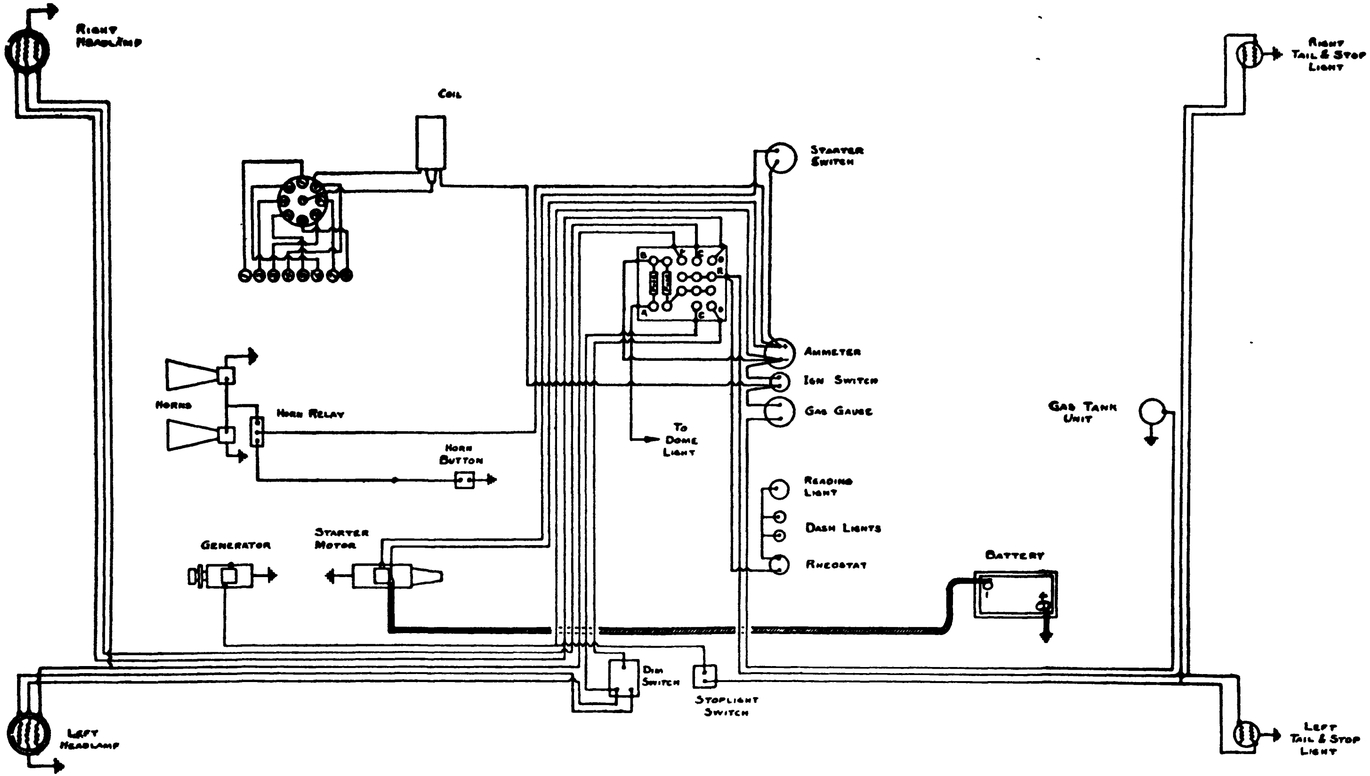
Gear Ratio 4.09 to 1 Hypoid Gears

Axle Own Semi-Floating

Brakes Hydraulic Servo
- **Front** 13″ x 1¾″ x 3/16″ Clearance .010″
- **Rear** 13″ x 1¾″ x 3/16″ Clearance .010″
- **Hand** Rear Wheels

Lining U. S. Asbestos Primary No. 714, Secondary No. 589

Diagram 36-26



115

PACKARD WIRING DIAGRAM, 1935, MODEL 120, 8-CYLINDER

Courtesy of Packard Motor Car Company

Packard **Model 120, 8-Cylinder** **Year 1935**

Battery Prest-O-Lite **Type** **Volts 6** **Amps.** 114
Frame Connection Positive

Lighting Mazda 2330 **Head Lights** 6-8, 32-32 C.P.
Dash, Tail and Stop 6-8, 3-3-15 C.P.
Side Lights 6-8, 1 C.P.

Starter and Generator Auto-Lite

Generator Cold **Max. Chg. Rate** 23 Amps. **Speed**
Regulation 3rd Brush **Cut-in** 7-7.4 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018″-.022″
Spark Plug—Size 14 M.M. **Gap** .025″-.027″
Firing Order 1-6-2-5-8-3-7-4
Timing 5° B.T.C. Full Advance

Engine **Bore** 3¼″ **Stroke** 3⅞″ **Taxable H.P.** 33.80
Piston Ring—Width Oil 5/32″ Comp. ⅛″
Diam. 3¼″ **Gap** .007″-.012″ on All
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .007″ Warm
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .009″ Warm

Carburetor Stromberg EE14

Steering Caster 2° Camber 1° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 16½ Qts.

Clutch Long **Facings** Woven 6″ x 10″ x .137″ 2 Required

Gear Ratio Gears Hypoid

Axle Own Semi-Floating

Brakes Bendix Hydraulic
- **Front** 26″ x 1¾″ x 3/16″ Clearance .010″
- **Rear** 26″ x 1¾″ x 3/16″ Clearance .010″
- **Hand** Rear Service

Lining Moulded

Diagram 115

Packard Models 1100, 1101 and 1102, 8-Cylinder Year 1934

Battery Prest-O-Lite **Type** 619-ST **Volts** 6 **Amps.** 144
Frame Connection Positive

Lighting Mazda 3003 **Head Lights** 6-8, 32-32-32 C.P.
Mazda 63, 87 **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Owen-Dyneto

Generator **Max. Chg. Rate** 24 Amps. **Speed** 1400 R.P.M.
Regulation 3rd Brush **Cut-in** 6.5 Volts
Relay Air Gap .010″ **Contact Gap** .015″

Ignition Delco-Remy **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing Standard Head 6° B.T.C. High Comp. 8° B.T.C.

Engine **Bore** 3$\frac{3}{16}$″ **Stroke** 5″ **Taxable H.P.** 32.5
Piston Ring—Width Oil 1—$\frac{5}{32}$″ Comp. 3—$\frac{1}{8}$″
Diam. 3$\frac{3}{16}$″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 30° B.T.C. **Close** 65° A.B.C.
Intake Clearance .004″ Hot
Exhaust Timing—Open 65° B.B.C. **Close** 30° A.T.C.
Exhaust Clearance .006″ Hot

Carburetor Stromberg EE22

Steering Caster 1$\frac{1}{2}$° Camber 1$\frac{1}{2}$° Toe-in $\frac{1}{16}$″

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gals.

Clutch Long **Facings** Moulded 7″ x 12″ x .137″ 2 Required

Gear Ratio Hypoid Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
Front 30$\frac{1}{4}$″ x Left 1$\frac{3}{4}$″, Right 2$\frac{1}{4}$″ x $\frac{1}{4}$″ Clearance .010″
Rear 30$\frac{1}{4}$″ x 2$\frac{1}{4}$″ x $\frac{1}{4}$″ Clearance .010″
Hand 4 Wheels
Lining Moulded and Semi-Moulded

Packard Models 1001 and 1002, 8-Cylinder Year 1933

Battery Prest-O-Lite **Type** A-619-ST **Volts** 6 **Amps.** 144
Frame Connection Positive

Lighting Triple Contact **Head Lights** 6-8, 32-32-32 C.P.
Single Contact **Dash, Tail and Stop** 6-8, 3-3-15 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Owen-Dyneto

Generator Hot **Max. Chg. Rate** 18 Amps. **Speed** 1300 R.P.M.
Regulation 3rd Brush **Cut-in** 6.2 Volts
Relay Air Gap .010″ **Contact Gap** .015″

Ignition North East **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing Standard Compression 9° Flywheel B.T.C.

Engine **Bore** 3$\frac{3}{16}$″ **Stroke** 5″ **Taxable H.P.** 32.50
Piston Ring—Width Oil 1—$\frac{5}{32}$″ Comp. 3—$\frac{1}{8}$″
Diam. 3$\frac{3}{16}$″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 30° B.T.C. **Close** 65° A.B.C.
Intake Clearance .004″ Hot
Exhaust Timing—Open 65° B.B.C. **Close** 30° A.T.C.
Exhaust Clearance .004″ Hot

Carburetor Stromberg EE22

Steering Caster 3$\frac{1}{4}$° Camber 1$\frac{1}{2}$° Toe-in $\frac{1}{16}$″

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gals.

Clutch Long **Facings** Moulded 6″ x 11″ x .137″ 2 Required

Gear Ratio Hypoid Gears

Axle Own Semi-Floating

Brakes Bendix Booster Mechanical
- **Front** 43$\frac{1}{4}$″ x 1$\frac{3}{4}$″ x $\frac{1}{4}$″ Clearance .010″
- **Rear** 43$\frac{1}{4}$″ x 1$\frac{3}{4}$″ x $\frac{1}{4}$″ Clearance .010″
- **Hand** 4 Wheels

Lining Moulded and Semi-Moulded

Pierce Arrow   Model 8-36A   Year 1934

Battery Willard **Type** WH-4-17 **Volts** 6 **Amps.** 136
Frame Connection Positive

Lighting Mazda 1000 **Head Lights** 6-8, 32-32 C.P.
Mazda 63, 1129 **Dash, Tail and Stop** 6-8, 3-6-21 C.P.
Mazda 81 **Side Lights** 6-8, 6 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 12-14 Amps. **Speed** 1800 R.P.M
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 4¾″ **Taxable H.P.** 39.2
Piston Ring—Width Oil 2—³⁄₁₆″ Comp. 2—⅛″
Diam. 3½″ **Gap** Oil .015″-.028″ Comp. .015″
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 5° A.T.C. **Close** 45° A.B.C.
Intake Clearance .000″
Exhaust Timing—Open 40° B.B.C. **Close** 12° A.T.C.
Exhaust Clearance .000″

Carburetor Stromberg EE3

Steering Caster ¾° Camber 1° Toe-in ¼″

Cooling System Centrifugal **Type** Pump **Capacity** 6½ Gals.

Clutch Long **Facings** Moulded 6¼″ x 9¾″ x .130″ 4 Required

Gear Ratio Ring Gear 55 Pinion 13 Hypoid

Axle Own Semi-Floating

Brakes Stewart Mechanical
- **Front** 38″ x 2¼″ x .270″
- **Rear** 38″ x 2¼″ x .270″
- **Hand** 4 Wheels

Lining Moulded

Pierce Arrow Model 836 Year 1933

Battery Willard **Type** WH-4-17 **Volts** 6 **Amps.** 136
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 32-32 C.P.
Single Contact **Dash, Tail and Stop** 6-8, 3-6-21 C.P.
Single Contact **Side Lights** 6-8, 6 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 12-14 Amps. **Speed** 1800 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size ⅞″—18 S.A.E. **Gap** .025″-.030″
Firing Order 1-6-2-5-8-3-7-4
Timing 5° B.T.C. Full Advance

Engine **Bore** 3½″ **Stroke** 4¾″ **Taxable H.P.** 39.20
Piston Ring—Width Oil 1—3/16″ Comp. 3—⅛″
Diam. 3½″ **Gap** Oil .013″ Comp. .015″
Oiling—Type Pump **Capacity** 9 Qts.

Valves **Intake Timing—Open** 5° A.T.C. **Close** 45° A.B.C.
Intake Clearance .010″ for Timing, None in Service
Exhaust Timing—Open 40° B.B.C. **Close** 12° A.T.C.
Exhaust Clearance .010″ for Timing, None in Service

Carburetor Stromberg EE-3

Cooling System Centrifugal **Type** Pump **Capacity** 6½ Gals.

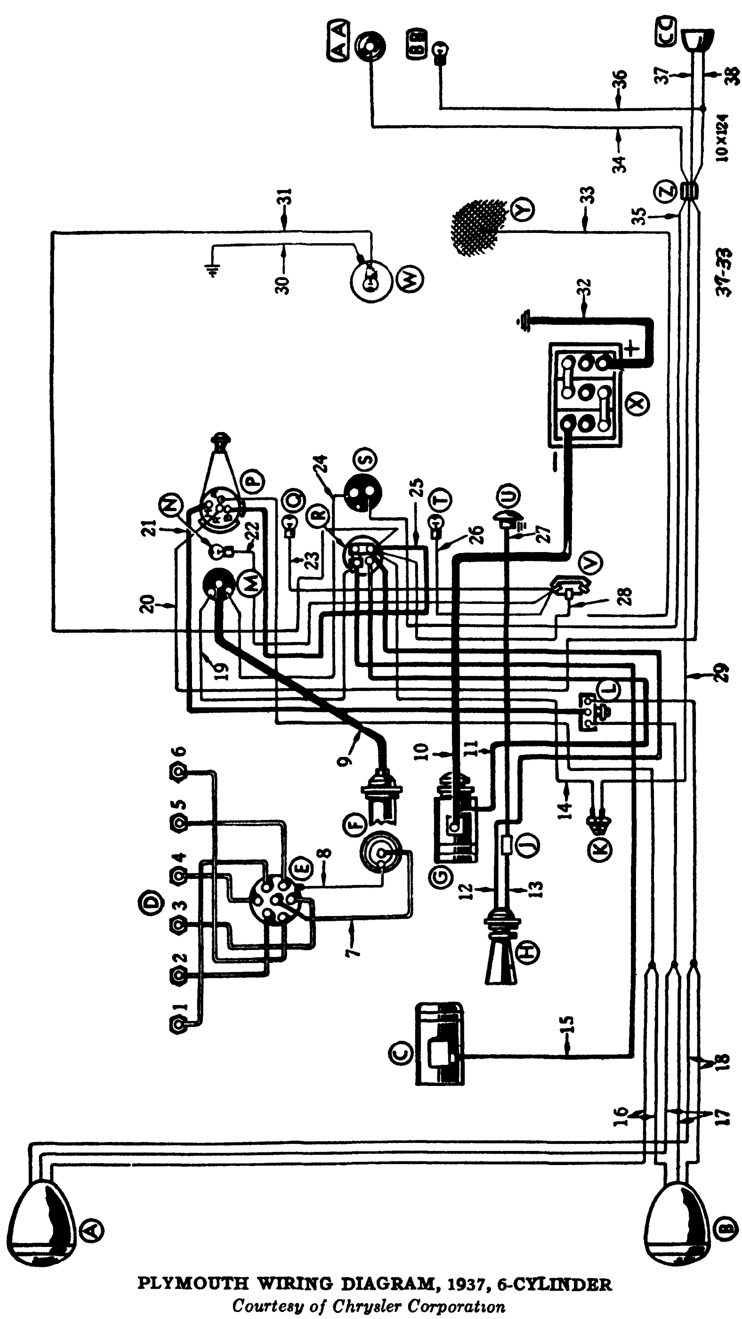
Clutch Long **Facings** Moulded 6¼″ x 9¾″ x .130″ 4 Required

Gear Ratio Ring Gear 30 Worm 7 Worm Gears

Axle Own Full-Floating

Brakes Mechanical
- **Front** 38″ x 2¼″ x .270″
- **Rear** 38″ x 2¼″ x .270″
- **Hand** 4 Wheels

Lining Moulded



PLYMOUTH WIRING DIAGRAM, 1937, 6-CYLINDER
Courtesy of Chrysler Corporation

Plymouth Model 6-Cylinder Year 1937

Battery Willard **Type** **Volts** 6-8 **Amps.** 90
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.
Mazda 1158 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 3 C.P.
Mazda 55 **Parking Lights** 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 12.5 Amps. Hot **Speed** 2400 R.P.M., Arm.
Regulation Voltage **Cut-in** 7 Volts, 820 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 4° A.T.C.

Engine **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 23.44
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅛″ **Gap** Oil .007″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance Hot .006″ Operating, .011″ Timing
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance Hot. 008″ Operating, .012″ Timing

Carburetor Carter BB

Steering Caster 2° Camber ½° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 15 Qts.

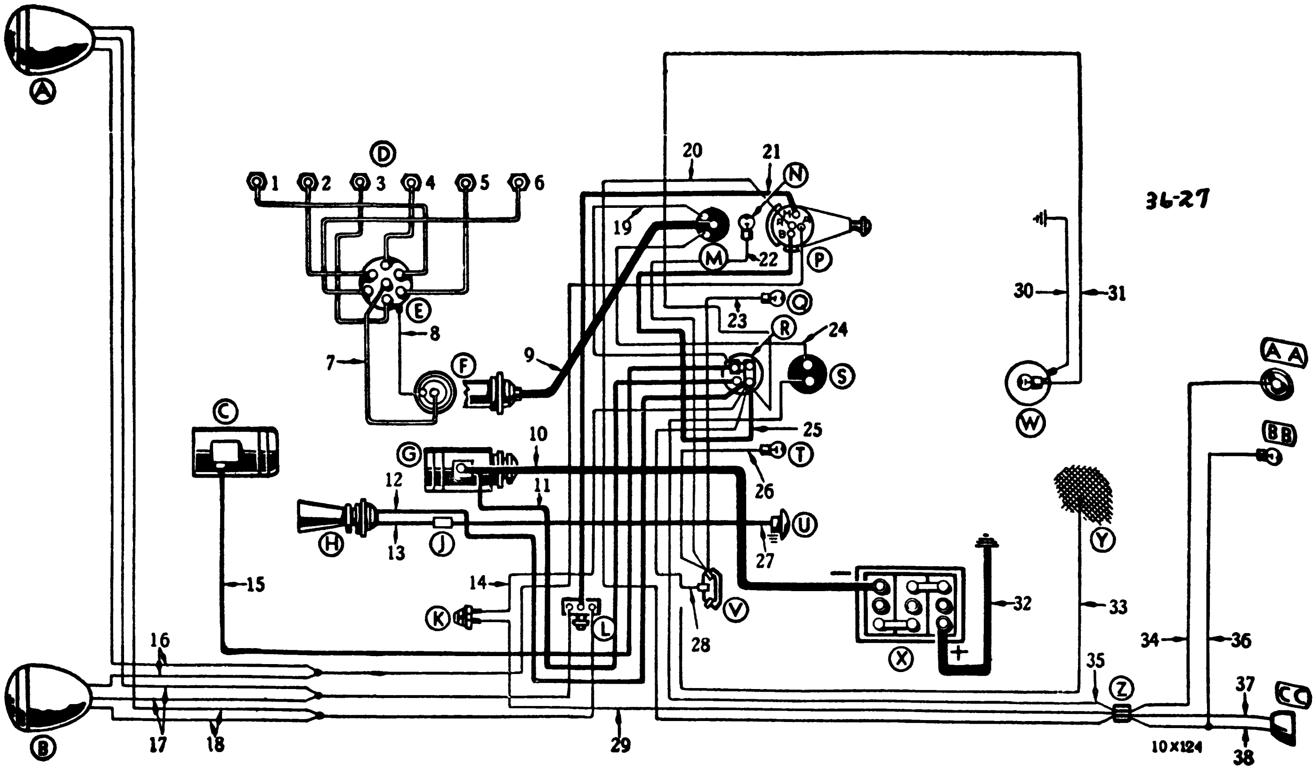
Clutch Borg & Beck **Facings** Moulded and Woven 5⅝″ x 9¼″ x .133″
2 Required

Gear Ratio Ring Gear 41 Pinion 10 Hypoid Gears

Axle Own ¾-Floating

Brakes Lockheed Hydraulic
- **Front** 19 13/16″ x 2″ x 13/64″ Clearance .006″ Heel, .012″ Toe
- **Rear** 17 19/64″ x 2″ x 13/64″ Clearance .006″ Heel, .012″ Toe
- **Hand** Transmission 6 15/16″ x 2″ x 5/32″

Lining Moulded Diagram 37-33



PLYMOUTH WIRING DIAGRAM, 1936, MODEL, MASTER
Courtesy of Chrysler Corporation

Plymouth Model Master *Year 1936*

Battery Willard *Type* *Volts 6* **Amps. 86**

Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.

Stop Light 6-8, 21 C.P. **Tail** 6-8, 3 C.P.

Parking Lights 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite — **Max. Chg. Rate** 21 Amps. with Voltage Control — **Speed** 26 M.P.H.

Regulation 3rd Brush and Voltage Control — **Cut-in** 6.5-7.3 Volts — **Contact Gap** .015″-.025″

Ignition Auto-Lite — **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 4° A.T.C.

Engine **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 23.44

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″

Diam. 3⅛″ **Gap** .007″-.015″

Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.

Intake Clearance .006″ Hot

Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.

Exhaust Clearance .008″ Hot

Carburetor Ball & Ball

Steering Caster 2° Camber ½° Toe-in 0″ to ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 15 Qts.

Clutch Borg & Beck **Facings** Moulded and Woven 5⅝″ x 9¼″ x .133″ 2 Required

Gear Ratio 4.125 to 1 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic

- **Front** 19 13/16″ x 2″ x 13/64″ Clearance Toe .012″ Heel .006″
- **Rear** 19 13/16″ x 2″ x 13/64″ Clearance Toe .012″ Heel .006″
- **Hand** Transmission 18 13/32″ x 2″ x 5/32″ Clearance 1/16″

Lining Moulded Diagram 36-27

Plymouth — Models PF and PG — Year 1934

Battery Willard **Type** WS-1-13 **Volts** 6 **Amps.** 86
Frame Connection Positive

Lighting Mazda 1110 **Head Lights** 6-8, 21-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 10-13 Amps. **Speed** 2100 R.P.M.
Regulation 3rd Brush **Cut-in** 6.5-7.3 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing Cast Iron Head 9° B.T.C. High Comp. Head 6° B.T.C.

Engine **Bore** $3\frac{1}{8}$″ **Stroke** $4\frac{3}{8}$″ **Taxable H.P.** 23.44
Piston Ring—Width Oil 1—$\frac{1}{8}$″, 1—$\frac{5}{32}$″ Comp. 2—$\frac{1}{8}$″
Diam. $3\frac{1}{8}$″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .005″ Hot
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .007″ Hot

Carburetor Ball & Ball

Steering Caster 1°-3° Camber $\frac{1}{4}$°-$\frac{3}{4}$° Toe-in $\frac{1}{8}$″

Cooling System Centrifugal **Type** Pump **Capacity** $3\frac{3}{4}$ Gals.

Clutch Borg & Beck **Facings** Moulded $5\frac{3}{4}$″ x 9″ x .133″ 2 Required

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 15 $\frac{23}{32}$″ x $1\frac{1}{2}$″ x $\frac{3}{16}$″ Clearance Heel .006″ Toe .012″
- **Rear** 15 $\frac{23}{32}$″ x $1\frac{1}{2}$″ x $\frac{3}{16}$″ Clearance Heel .006″ Toe .012″
- **Hand** Transmission $18\frac{13}{32}$″ x 2″ x $\frac{5}{32}$″ Clearance $\frac{1}{16}$″

Lining Moulded

Plymouth Model New Six PC Year 1933

Battery Willard **Type** WS-1-13 **Volts** 6 **Amps.** 86
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 32-21 C.P.
Double Contact **Stop & Tail** 6-8, 21-2 C.P.
Single Contact **Side Lights & Dash** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13-15 Amps. **Speed** 2800-3000 R.P.M.
Regulation 3rd Brush, Thermo. **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order —1-5-3-6-2-4
Timing Silver Dome 622-H 10° B.T.D.C.
Red Head 622-H 8° B.T.D.C.
Silver Dome 644-H At T.D.C.
Red Head 644-10 At T.D.C.

Engine **Bore** 3-1/8″ **Stroke** 4-1/8″ **Taxable H.P.** 23.44
Piston Ring—Width 1-5/32″, 3-1/8″ **Diam.** 3-1/8″ **Gap** All Rings .007″
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .005″ Hot
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .007″ Hot

Carburetor Ball & Ball

Cooling System Centrifugal **Type** Pump **Capacity** 3-1/4 Gals.

Clutch Borg & Beck **Facing**—Moulded 9″ x 5-3/4″ x .133″

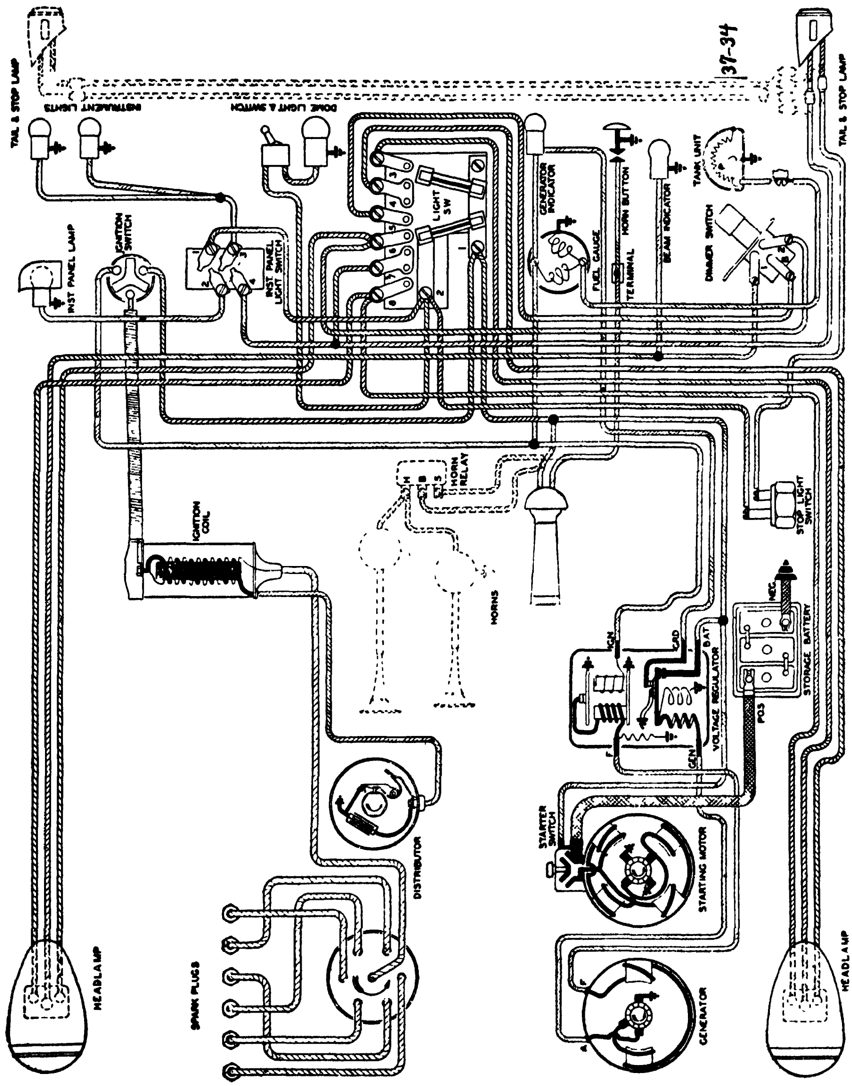
Gear Ratio Ring Gear 35 Pinion 8 Spiral Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic

				Heel	Toe
Front	18-5/16″ x 1-1/2″ x 3/16″	Clearance		.006″	.012″
Rear	18-5/16″ x 1-1/2″ x 3/16″	Clearance		.006″	.012″
Hand	Trans. 18-13/32″ x 2″ x 5/32″	Clearance 1/16″			

Lining—Moulded



PONTIAC WIRING DIAGRAM, 1937, 6-CYLINDER

Courtesy of Pontiac Motor Company

Pontiac **Model 6-Cylinder** **Year 1937**

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 94
Frame Connection Negative

Lighting **Head Lights** 6-8 Volts
Stop Light 6-8 Volts **Tail** 6-8 Volts
Parking Lights 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 18 Amps. Hot **Speed** 3500 R.P.M., Arm.
Regulation Voltage **Cut-in** 6.5 Volts, 830 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .018″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 2° B.T.C.

Engine **Bore** 3 7/16″ **Stroke** 4″ **Taxable H.P.** 28.30
Piston Ring—Width Oil 1—3/16″ Comp. 2—1/8″
Diam. 3 7/16″ **Gap** Oil .007″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 6 Qts. **Pressure** 35 Lbs. @40 M.P.H.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance Hot .011″ Operating, .015″ Timing
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance Hot .011″ Operating, .015″ Timing

Carburetor Carter 352S

Steering Caster 0° Camber 1° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 16 Qts.

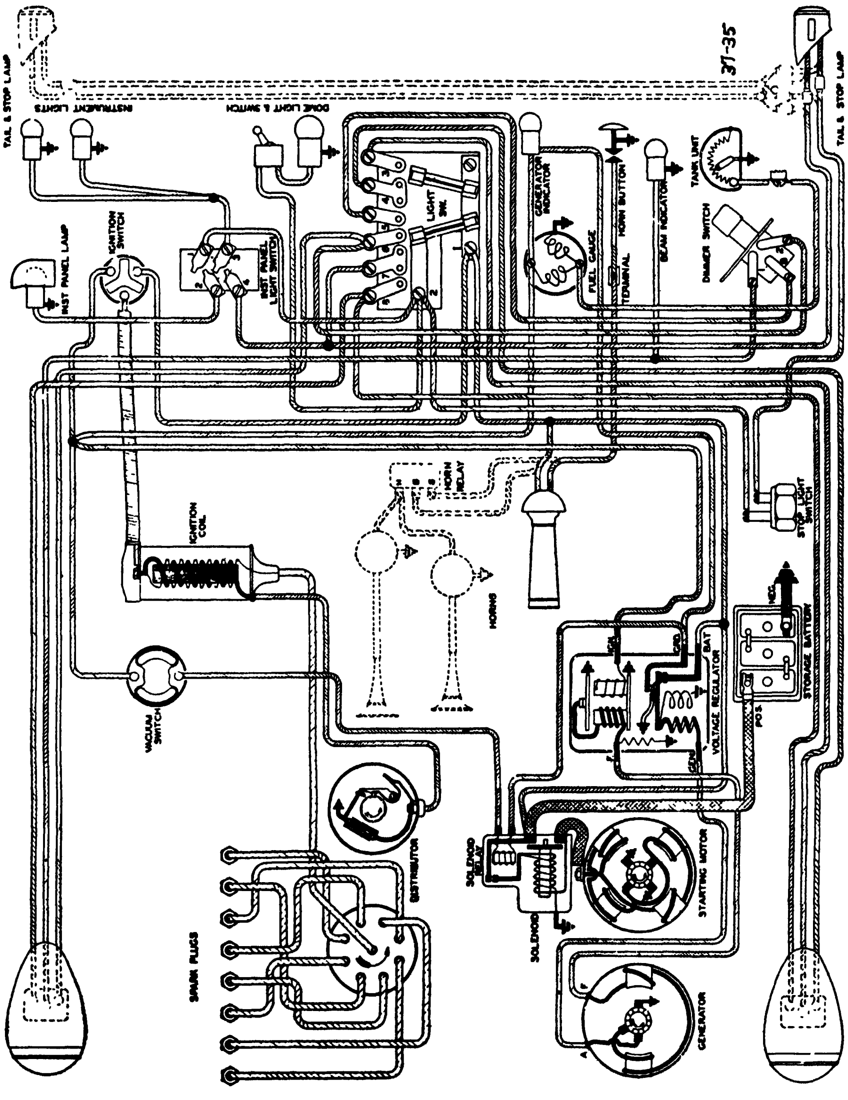
Clutch Long **Facings** Woven 6″ x 10″ x 1/8″ 2 Required

Gear Ratio Ring Gear 35 Pinion 8 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
- **Front** 23 1/16″ x 1 3/4″ x 3/16″ Clearance .010″
- **Rear** 23 1/16″ x 1 3/4″ x 3/16″ Clearance .010″
- **Hand** Rear Service

Lining Moulded **Diagram** 37-34



PONTIAC WIRING DIAGRAM, 1937, 8-CYLINDER

Courtesy of Pontiac Motor Company

Pontiac **Model 8-Cylinder** **Year 1937**

Battery Delco-Remy **Type** **Volts** 6-8 **Amps.** 110
Frame Connection Negative

Lighting **Head Lights** 6-8 Volts
Stop Light 6-8 Volts **Tail** 6-8 Volts
Parking Lights 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 18 Amps. Hot **Speed** 3500 R.P.M., Arm.
Regulation Voltage **Cut-in** 6.5 Volts, 830 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .015″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 2° B.T.C.

Engine **Bore** 3¼″ **Stroke** 3¾″ **Taxable H.P.** 33.80
Piston Ring—Width Oil 1—3/16″ Comp. 2—⅛″
Diam. 3¼″ **Gap** Oil .007″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 7 Qts. **Pressure** 35 Lbs. @45 M.P.H.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance Hot. 011″ Operating, .015″ Timing
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance Hot. 011″ Operating, .015″ Timing

Carburetor Carter 350S

Steering Caster 0° Camber 1° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 19 Qts.

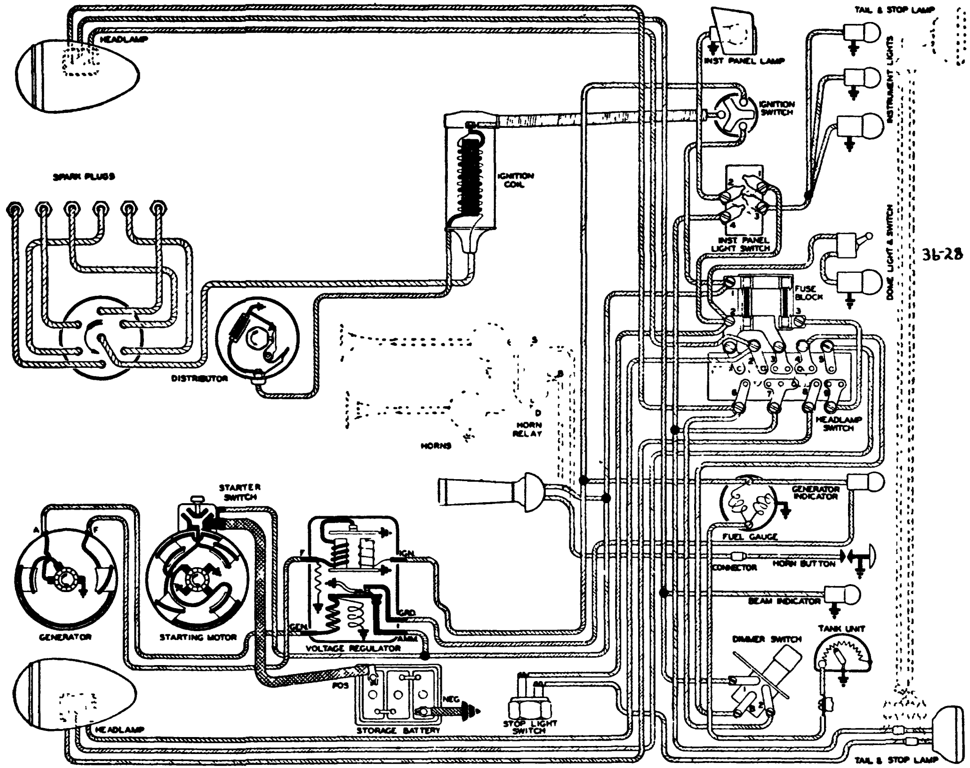
Clutch Long, Driven Plate **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio Ring Gear 35 Pinion 8 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Hydraulic
Front 23 1/16″ x 1¾″ x 3/16″ Clearance .010″
Rear 23 1/16″ x 1¾″ x 3/16″ Clearance .010″
Hand Rear Service

Lining Moulded **Diagram** 37-35



PONTIAC WIRING DIAGRAM, 1936, MODEL, 6-CYLINDER

Courtesy of Pontiac Motor Company

Pontiac **Model 6-Cylinder** **Year 1936**

Battery Delco-Remy **Type** **Volts 6** **Amps. 94**

Frame Connection Negative

Lighting
Head Lights 6-8, 32-21 C.P.
Stop Light 6-8, 15 C.P. **Tail** 6-8, 3 C.P.
Parking Lights 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 21 Amps. Hot **Speed** 10 M.P.H.
Regulation 3rd Brush **Cut-in** 6.5 Volts
Voltage Control, Air Gap .018″-.022″ **Contact Gap** .018″-.025″

Ignition Remy
Contact Breaker Gap .020″
Spark Plug—Size 14 M.M. **Gap** Radio .022″; Reg. .025″
Firing Order 1-5-3-6-2-4
Timing 4° Between Lines "IGN," 1 and 6

Engine **Bore** 3⅜″ **Stroke** 3⅞″ **Taxable H.P. 27.4**
Piston Ring—Width Oil $\frac{3}{16}$″, Comp. ⅛″
Diam. 3⅜″ **Gap** .007″
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .009″-.011″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .009″-.011″ Hot

Carburetor Carter 324S

Steering Caster 0° Camber 0° Toe-in 0″

Cooling System Pump **Type** Centrifugal **Capacity** 14 Qts.

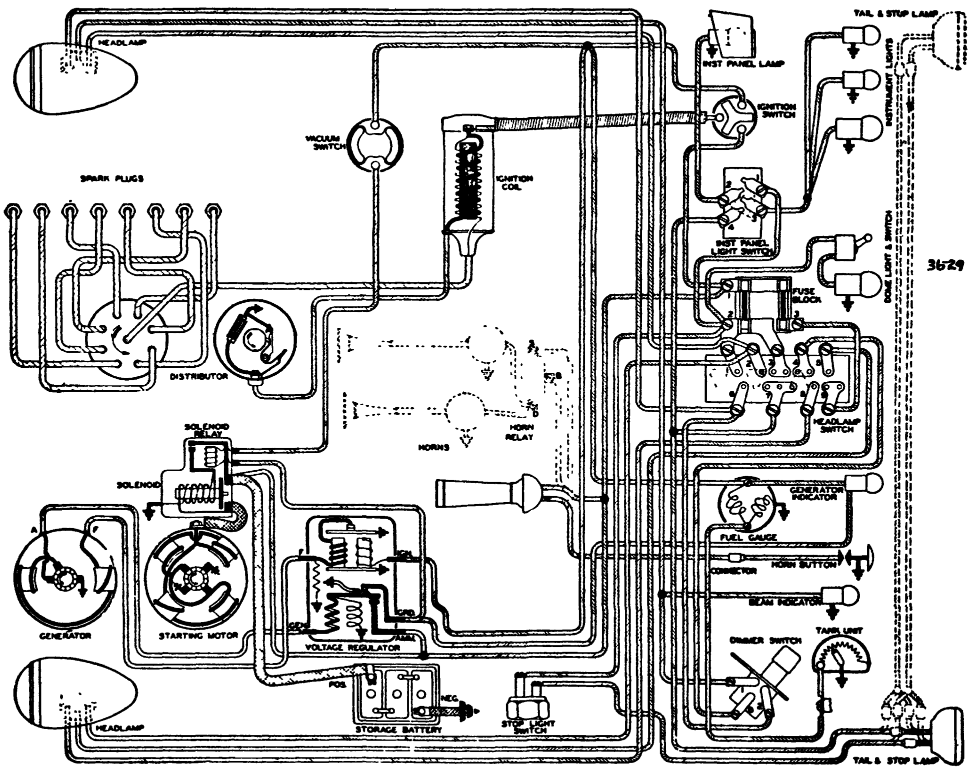
Clutch Long **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio 4.44 to 1

Axle Own Semi-Floating

Brakes Hydraulic
Front 23$\frac{1}{16}$″ x 1¾″ x $\frac{3}{16}$″
Rear 23$\frac{1}{16}$″ x 1¾″ x $\frac{3}{16}$″
Hand Rear Service

Lining Moulded **Diagram 36-28**



PONTIAC WIRING DIAGRAM, 1936, MODEL, 8-CYLINDER

Courtesy of Pontiac Motor Company

Pontiac **Model 8-Cylinder** **Year 1936**

Battery Delco-Remy **Type** **Volts 6** **Amps. 107**
Frame Connection Negative

Lighting 2-Filament **Head Lights** 6-8, 32-21 C.P.
Stop Light 6-8, 15 C.P. **Tail 6-8, 3 C.P.**
Parking Lights 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 21 Amps. Hot **Speed 10 M.P.H.**
Regulation 3rd Brush **Cut-in 6.5 Volts**
Voltage Control, Air Gap .018″-.022″ Contact Gap .018″-.025″

Ignition Delco-Remy
Contact Breaker Gap .018″
Spark Plug—Size 14 M.M. Gap Radio .022″ **Reg. .025″**
Firing Order 1-6-2-5-8-3-7-4
Timing 2° B.T.C. Retard

Engine **Bore 3¼″** **Stroke 3½″** **Taxable H.P. 33.8**
Piston Ring—Width Oil $\frac{3}{16}$″ Comp. ⅛″
Diam. 3¼″ **Gap .007″**
Oiling—**Type** Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .009″-.011″ Hot
Exhaust Timing—Open 45° B.B.C. **Close 5°** A.T.C.
Exhaust Clearance .009″-.011″ Hot

Carburetor Carter 322S

Steering Caster 0° Camber 0° Toe-in 0

Cooling System Pump **Type** Centrifugal **Capacity 15 Qts.**

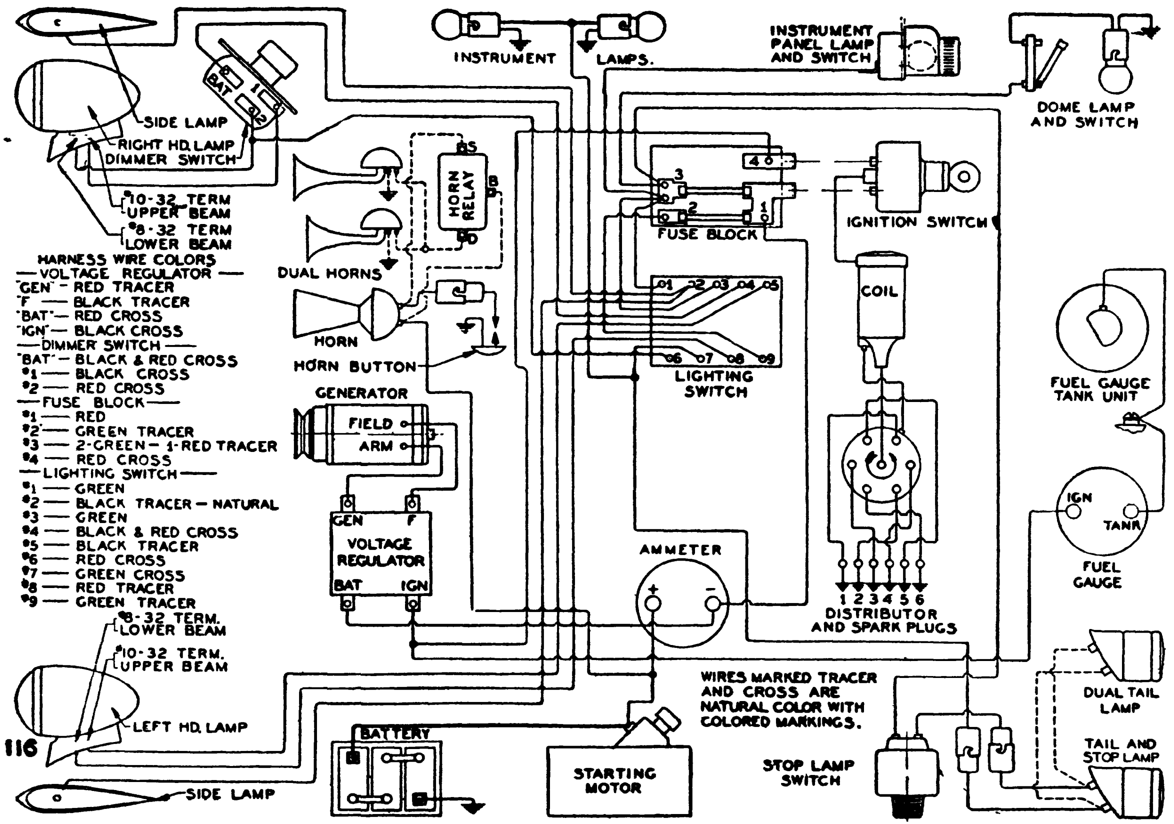
Clutch Long **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio 4.5 to 1

Axle Own Semi-Floating

Brakes Hydraulic
Front 23$\frac{1}{16}$″ x 1¾″ x $\frac{3}{16}$″
Rear 23$\frac{1}{16}$″ x 1¾″ x $\frac{3}{16}$″
Hand Rear Service

Lining Moulded **Diagram 36-29**



116

PONTIAC WIRING DIAGRAM, 1935, MODEL 6-CYLINDER
Courtesy of Pontiac Motor Company

Pontiac **Model 6-Cylinder** **Year 1935**

Battery Delco-Remy **Type** **Volts** 6 **Amps.** 94
Frame Connection Negative

Lighting
Head Lights 6-8, 21-32 C.P.
Dash, Tail and Stop 6-8, 3-3-15 C.P.
Side Lights 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 18 Amps. **Speed** 40 M.P.H.
Regulation 3rd Brush **Cut-in** 6.5 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 9° B.T.C. Retard

Engine **Bore** $3\frac{3}{8}$″ **Stroke** $3\frac{7}{8}$″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp. 3—$\frac{1}{8}$″
Diam. $3\frac{3}{8}$″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .009″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .011″ Hot

Carburetor Carter WI-306-S

Steering Caster $19\frac{3}{4}$° Camber 0° Toe-in $\frac{1}{32}$″

Cooling System Centrifugal **Type** Pump **Capacity** $3\frac{3}{4}$ Gals.

Clutch Own **Facings** Moulded $6\frac{1}{4}$″ x $9\frac{7}{8}$″ x $\frac{1}{8}$″ 2 Required

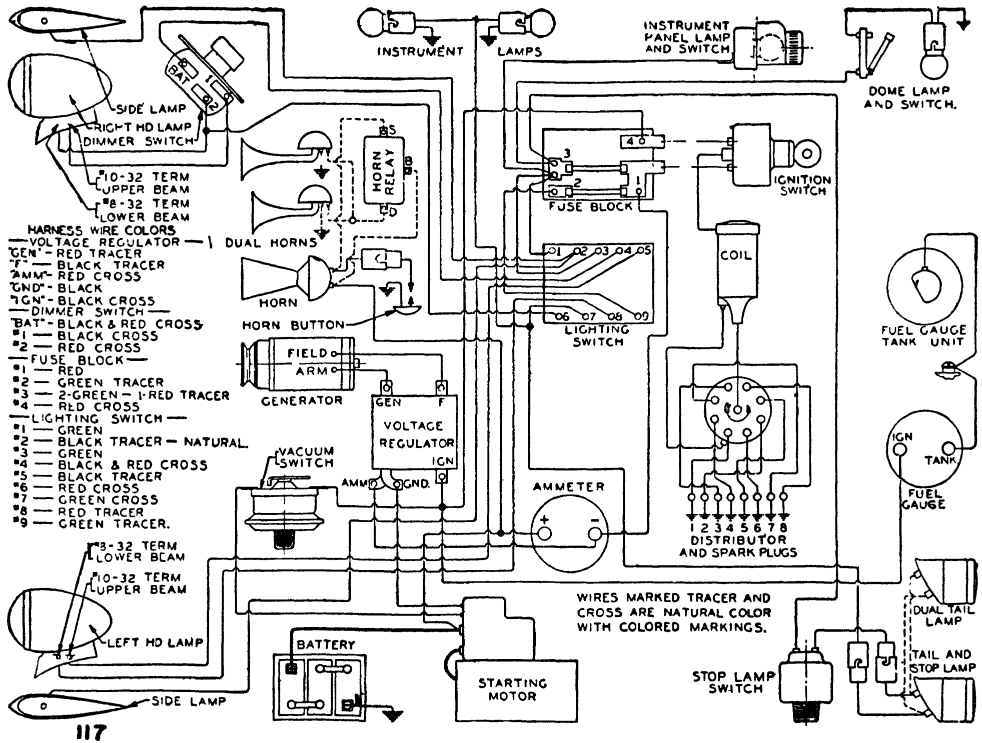
Gear Ratio Ring Gear 40 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Hydraulic Bendix
- **Front** $25\frac{15}{16}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″ Clearance .010″
- **Rear** $25\frac{15}{16}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″ Clearance .010″
- **Hand** Rear Service

Lining Moulded

Diagram 116



PONTIAC WIRING DIAGRAM, 1935, MODEL 8-CYLINDER

Courtesy of Pontiac Motor Company

Pontiac   Model 8-Cylinder   Year 1935

Battery Delco-Remy **Type** **Volts** 6 **Amps.** 107
Frame Connection Negative

Lighting
Head Lights 6-8, 21-32 C.P.
Dash, Tail and Stop 6-8, 3-3-15 C.P.
Side Lights 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 18 Amps. **Speed** 40 M.P.H.
Regulation 3rd Brush **Cut-in** 6-7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 9° B.T.C. Retard

Engine **Bore** 3 3/16″ **Stroke** 3 1/2″ **Taxable H.P.** 32.52
Piston Ring—Width Oil 1—3/16″ Comp. 3—1/8″
Diam. 3 3/16″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .009″
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .011″

Carburetor Carter WI-308-S

Steering Caster 20° Camber 0° Toe-in 1/32″

Cooling System Centrifugal **Type** Pump **Capacity** 3 7/8 Gals.

Clutch Own **Facings** Moulded 6 1/4″ x 9 7/8″ x 1/8″ 2 Required

Gear Ratio Ring Gear 41 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes
Front 25 15/16″ x 1 3/4″ x 3/16″ Clearance .010″
Rear 25 15/16″ x 1 3/4″ x 3/16″ Clearance .010″
Hand Rear Service
Lining Moulded

Diagram 117

Pontiac Model 603, 8-Cylinder Year 1934

Battery Delco **Type** 17-GW **Volts** 6 **Amps.** 107
Frame Connection Negative

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63 **Dash and Tail** 6-8, 3 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 13-15 Amps. **Speed** 3000 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 9° B.T C.

Engine **Bore** $3\frac{3}{16}$″ **Stroke** $3\frac{1}{2}$″ **Taxable H.P.** 32.52
Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp 3—$\frac{1}{8}$″
Diam. $3\frac{3}{16}$″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B C.
Intake Clearance .009″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance 009″ Hot

Carburetor Carter WI

Steering Caster 0° Camber 2° Toe-in $\frac{1}{32}$″

Cooling System Centrifugal **Type** Pump **Capacity** $3\frac{3}{4}$ Gals.

Clutch Own **Facings** Moulded $6\frac{1}{4}$″ x 10″ x $\frac{1}{8}$″ 2 Required

Gear Ratio Ring Gear 41 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 26″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″
- **Rear** 26″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″
- **Hand** 4 Wheels

Lining Moulded

Pontiac **Model 8 Cylinder 601** **Year 1933**

Battery Delco **Type** 15-KW **Volts** 6 **Amps. 94**
Frame Connection Negative

Lighting Double Contact **Head Lights** 6-8, 32-21 C.P.
Single Contact **Dash & Tail** 6-8, 3 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 11-13 Amps. **Speed** 2000-2100 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .0125″-.0175″
Spark Plug—Size 14 M.M. **Gap** .018″-.023″
Firing Order—1-6-2-5-8-3-7-4
Timing 9° B.T.D.C. Auto Adv., Retard

Engine **Bore** 3-3/16″ **Stroke** 3-1/2″ **Taxable H.P.** 32 5
Piston Ring—Width 1-3/16″, 3-1/8″ **Diam.** 3-3/16″ **Gap** All Rings .007″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .009″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .009″ Hot

Carburetor Carter W1

Cooling System Centrifugal **Type** Pump **Capacity** 3-3/4 Gals.

Clutch Own **Facing**—Moulded 10″ x 6-1/4″ x 1/8″

Gear Ratio Ring Gear 40 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Own Mechanical
- **Front** 18-1/4″ x 1-3/4″ x 3/16″
- **Rear** 18-1/4″ x 1-3/4″ x 3/16″
- **Hand** All 4 Wheels

Lining—Moulded

Reo **Model Flying Cloud S-6** **Year 1934**

Battery Willard **Type** WH-1-13 **Volts** 6 **Amps.** 102
Frame Connection Negative

Lighting Mazda 1116 **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 87 **Dash, Tail and Stop** 6-8, 3-3-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 9-12 Amps. **Speed** 1800-2000 R.P.M.
Regulation 3rd Brush **Cut-in** 6.75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 18 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 8½° or 3 Teeth B.T.C.

Engine **Bore** 3⅜″ **Stroke** 5″ **Taxable H.P.** 27.3
Piston Ring—Width Oil 1—5/32″, 1—3/16″ Comp. 2—3/32″
Diam. 3⅜″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 50° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg

Steering Caster 3½° Camber 1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gals.

Clutch Long **Facings** Moulded 6¼″ x 9¾″ x 5/16″ 2 Required

Gear Ratio Ring Gear 43 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 24″ x 1¾″ x .17″ Clearance Heel .010″ Toe .012″
- **Rear** 24″ x 1¾″ x .17″ Clearance Heel .010″ Toe .012″
- **Hand** Transmission 20½″ x 2½″ x 3/16″ Clearance 1/32″

Lining Moulded

Reo **Model 8-N-2** **Year 1933**

Battery Willard **Type** RH-4-17 **Volts** 6 **Amps.** 137
Frame Connection Negative

Lighting Double Contact **Head Lights** 6-8, 21-21 C.P.
Single Contact **Dash & Tail** 6-8, 3 C.P. **Stop** 15 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 9-12 Amps. **Speed** 1800-2000 R.P.M.
Regulation 3rd Brush, Thermo. **Cut-in** 6 75-7.5 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order—1-6-2-5-8-3-7-4
Timing 3/4″ Flywheel B.T.D.C. Manual Full Adv.

Engine **Bore** 3-3/8″ **Stroke** 5″ **Taxable H.P.** 36.48
Piston Ring—Width 1-3/16″, 3-1/8″ **Diam.** 3-3/8″ **Gap** Oil Ring .005″ Comp.Ring.007″
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** At T.D.C. **Close** 50° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Schebler S

Cooling System Centrifugal **Type** Pump **Capacity** 5-3/4 Gals.

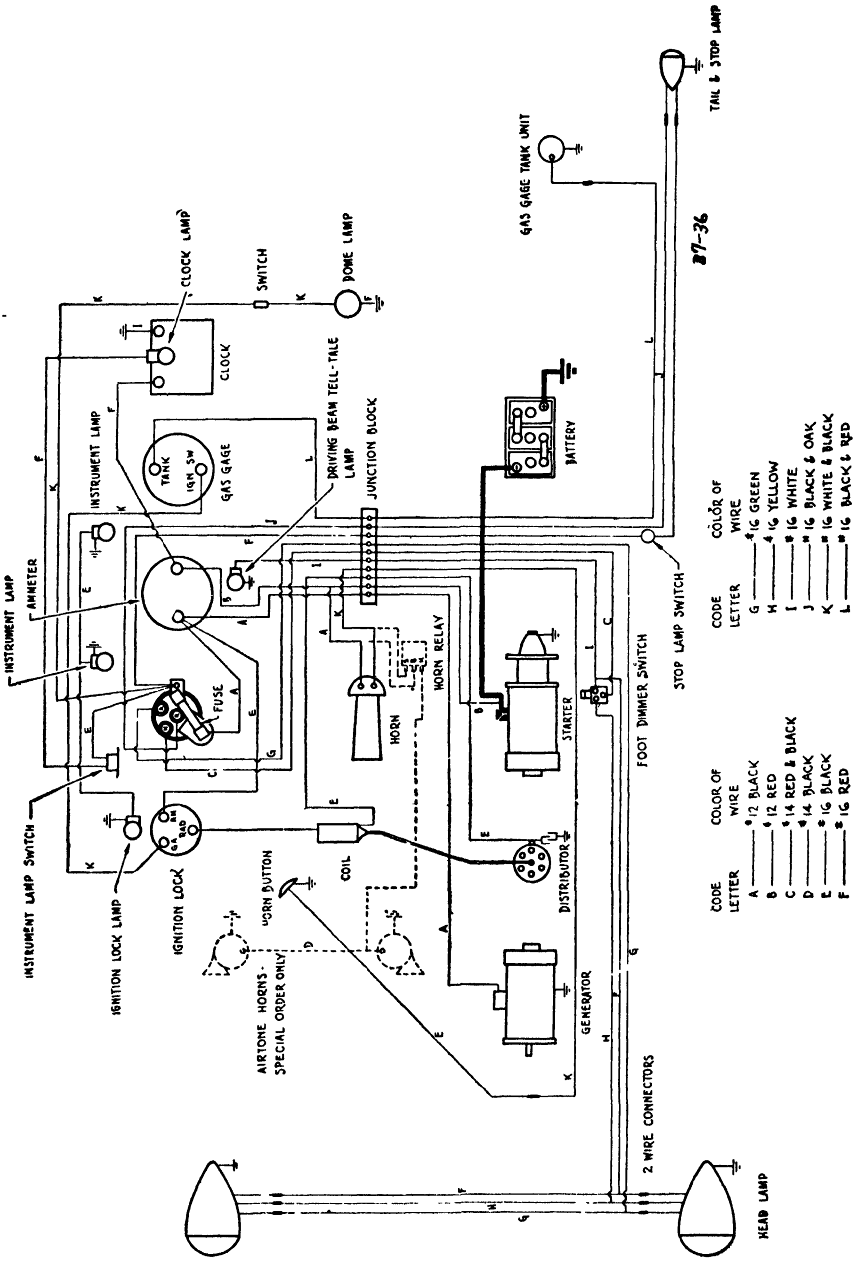
Clutch Long **Facing**—Moulded 9-3/4″ x 6-1/4″ x .130″

Gear Ratio Ring Gear 53 Pinion 18 Spiral Gears

Axle Own Semi-Floating

Brakes Lockheed Hydraulic				Heel	Toe
	Front	31-1/8″ x 2-1/4″ x .192″	Clearance	.006″	.010″
	Rear	31-1/8″ x 2-1/4″ x .192″	Clearance	.006″	.010″
	Hand	Trans. 20-1/2″ x 2-1/2″ x 3/16″	Clearance 1/32″		

Lining—Moulded



STUDEBAKER WIRING DIAGRAM, 1937, MODEL DICTATOR

Courtesy of Studebaker Corporation

Studebaker **Model Dictator** **Year 1937**

Battery Willard **Type** **Volts** 6-8 **Amps.** 105

Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.

Mazda 1158 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 2 C.P.

Mazda 55 **Parking Lights** 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 14.5 Amps. Hot **Speed** 2200 R.P.M., Arm.

Regulation **Cut-in** 7 Volts, 760 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Auto-Lite
Contact Breaker Gap .020″

Spark Plug—Size 18 M.M. **Gap** .022″

Firing Order 1-5-3-6-2-4

Timing 2° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.40

Piston Ring—Width Oil 1—³⁄₁₆″ Comp. 2—⅛″
Diam. 3¼″ **Gap** Oil .013″ Comp. .013″

Oiling—Type Gear Pump **Capacity** 5½ Qts.
Pressure 40 Lbs. @ 25 M.P.H.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.

Intake Clearance Cold .016″ Operating, .020″ Timing

Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance Cold 016″ Operating, .020″ Timing

Carburetor Stromberg EX23

Steering Caster 1½° Camber 1½° Toe-in ¹⁄₁₆″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

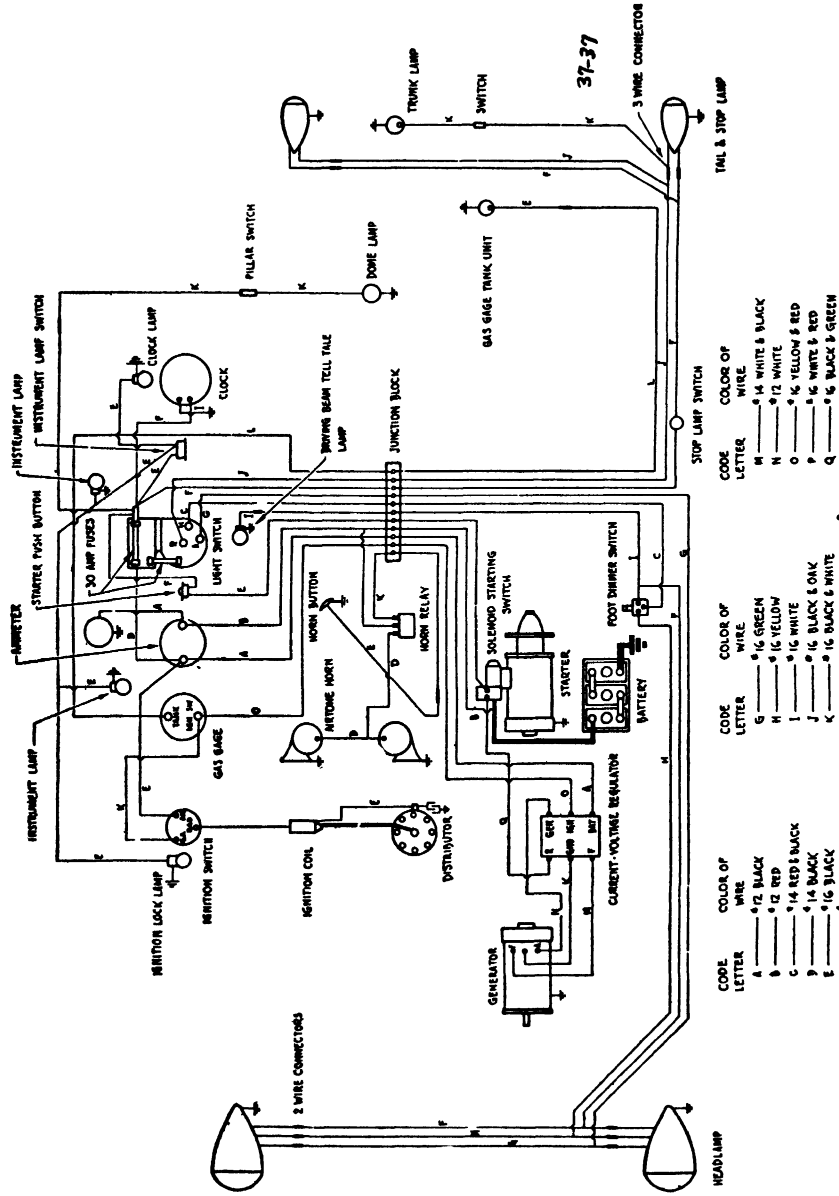
Clutch Borg & Beck **Facings** Moulded and Woven 5⅝″ x 9¼″ x .133″ 2 Required

Gear Ratio Ring Gear 50 Pinion 11 Hypoid Gears

Axle Spicer Semi-Floating

Brakes Lockheed Hydraulic
Front 19¹¹⁄₁₆″ x 1¾″ x ³⁄₁₆″
Rear 19¹¹⁄₁₆″ x 1¾″ x ³⁄₁₆″
Hand Rear Service

Lining Woven and Semi-Moulded **Diagram** 37-36



STUDEBAKER WIRING DIAGRAM, 1937, MODEL PRESIDENT

Courtesy of Studebaker Corporation

Studebaker   Model President   Year 1937

Battery Willard **Type** **Volts** 6-8 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.
Mazda 1158 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 2 C.P.
Mazda 55 **Parking Lights** 6-8, 1½ C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy
Max. Chg. Rate 25 Amps. Hot **Speed** 1650 R.P.M., Arm.
Regulation Voltage and Current **Cut-in** 6.5 Volts, 700 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco-Remy
Contact Breaker Gap .020″
Spark Plug—Size 18 M.M. **Gap** .022″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3$\frac{1}{16}$″ **Stroke** 4¼″ **Taxable H.P.** 30.00
Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp. 2—⅛″
Diam. 3$\frac{1}{16}$″ **Gap** Oil .013″ Comp. .013″
Oiling—Type Gear Pump **Capacity** 8 Qts.
Pressure 40 Lbs. @ 25 M.P.H.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.
Intake Clearance Cold .016″ Operating, .020″ Timing
Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Cold .016″ Operating, .020″ Timing

Carburetor Stromberg EE1

Steering Caster–¼° Camber ½° Toe-in $\frac{1}{16}$″

Cooling System Centrifugal **Type** Pump, Belt **Capacity**

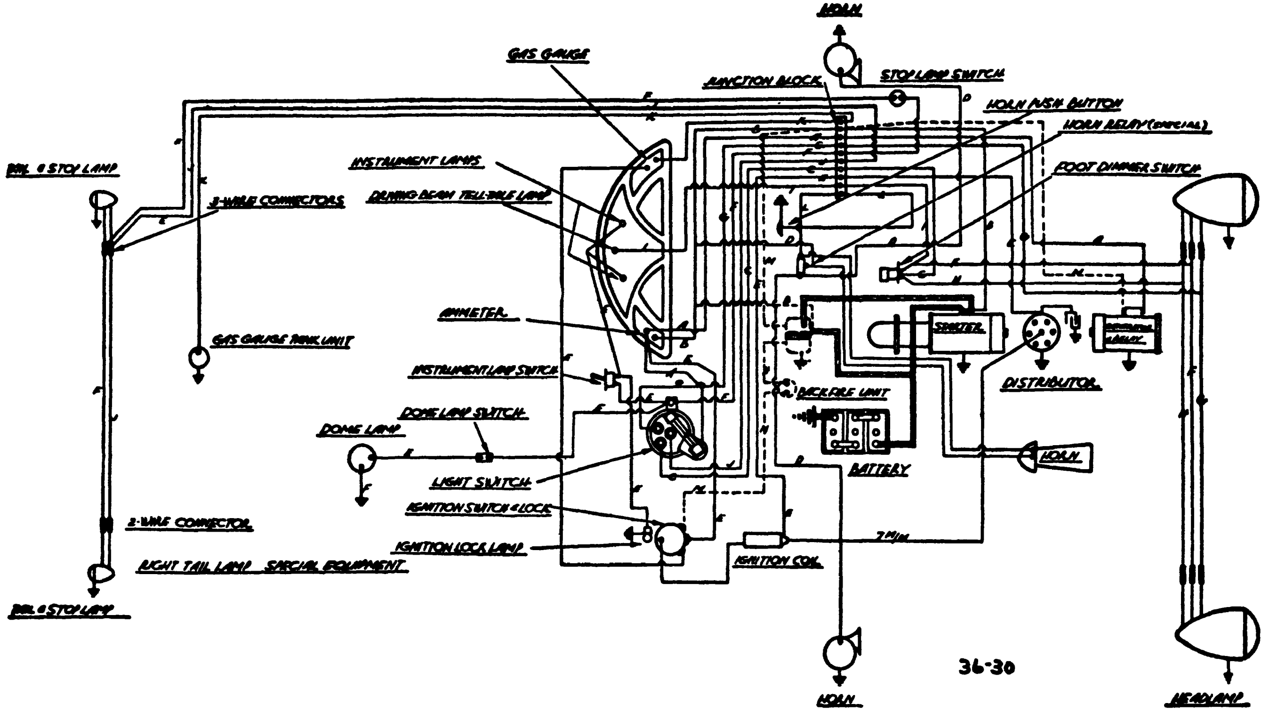
Clutch Long **Facings** Moulded 6″x10″x.137″ 2 Required

Gear Ratio Ring Gear 50 Pinion 11 Hypoid Gears

Axle Spicer Semi-Floating

Brakes Lockheed Hydraulic
Front 21½″ x 1¾″ x ¼″
Rear 21½″ x 1¾″ x ¼″
Hand Rear Service

Lining Woven and Semi-Moulded **Diagram** 37-37



STUDEBAKER WIRING DIAGRAM, 1936, MODEL, DICTATOR

Courtesy of Studebaker Corporation

Studebaker **Model Dictator** **Year 1936**

Battery Willard **Type** WH-1-13 **Volts** 6 **Amps.** 102
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P
Stop Light 6-8, 21 C.P. **Tail** 6-8, 2 C.P.
Parking Lights 6-8, 1½ C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 17 Amps. Hot **Speed** 20.6 M.P.H.
Regulation 3rd Brush and Voltage Control **Cut-in** 6.4 Volts
Contact Gap

Ignition Auto-Lite **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 9/64″ B.T.C.

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.4
Piston Ring—Width Oil 1—3/16″ Comp. 2—⅛″
Diam. 3¼″ **Gap** .013″-.018″
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.
Intake Clearance .020″
Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .020″

Carburetor Stromberg EX2

Steering Caster 1° Camber 1° Toe-in 1/16″ to ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 14 Qts.

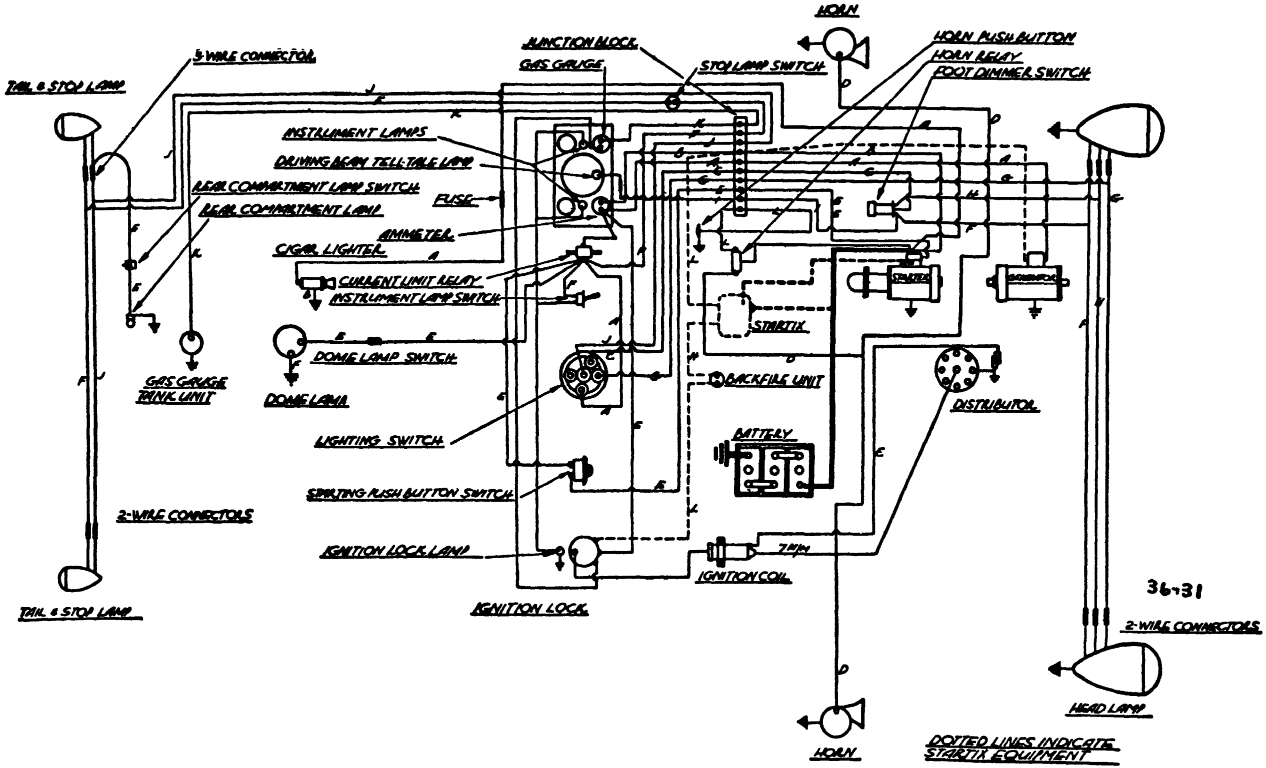
Clutch Borg & Beck **Facings** Moulded and Woven 5⅝″ x 9¼″ x .133″ 2 Required

Gear Ratio 4.55 to 1 Spiral Gears

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front 23″ x 1¾″ x ¼″ Clearance Heel .005″ Toe .010″
Rear 23″ x 1¾″ x ¼″ Clearance Heel .005″ Toe .010″
Hand Rear Service

Lining Woven **Diagram** 36-30



STUDEBAKER WIRING DIAGRAM, 1936, MODEL, PRESIDENT

Courtesy of Studebaker Corporation

Studebaker **Model President** **Year 1936**

Battery Willard **Type** WH-1-13 **Volts** 6 **Amps.** 102

Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.

Stop Light 6-8, 21 C.P. **Tail** 6-8, 2 C.P.

Parking Lights 6-8, 1½ C.P.

Starter and Generator Delco-Remy

Generator Delco-Remy — **Max. Chg. Rate** 17 Amps. Hot — **Speed** 37 M.P.H.

Regulation 3rd Brush and Voltage Control — **Cut-in** 6.4 Volts

Contact Gap

Ignition Delco-Remy — **Contact Breaker Gap** .018″-.024″

Spark Plug—Size 18 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing Upper Dead Center

Engine **Bore** 3$\frac{1}{16}$″ **Stroke** 4¼″ **Taxable H.P.** 30

Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp. 2—⅛″

Diam. 3$\frac{1}{16}$″ **Gap** .013″-.018″

Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.

Intake Clearance .020″

Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance .020″

Carburetor Stromberg EE1

Steering Caster ¼° Camber 1½° Toe-in $\frac{3}{16}$″

Cooling System Centrifugal **Type** Pump **Capacity** 17 Qts.

Clutch Long **Facings** Moulded 6″x10″x.137″ 2 Required

Gear Ratio 4.55 to 1 Spiral Gears

Axle Semi-Floating

Brakes Lockheed Hydraulic

- **Front** 25″ x 1¾″ x ¼″ — Clearance Heel .005″ Toe .010″
- **Rear** 25″ x 1¾″ x ¼″ — Clearance Heel .005″ Toe .010″
- **Hand** Rear Service

Lining Woven **Diagram** 36-31

Studebaker Models Dictator 6 and Deluxe A Year 1934

Battery Willard **Type** WH-1-13 **Volts** 6 **Amps.** 102
Frame Connection Positive

Lighting Mazda 1000 **Head Lights** 6-8, 32-32 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Cold **Max. Chg. Rate** 16-18 Amps. **Speed** 2400 R.P.M.
Regulation 3rd Brush **Cut-in** 6.4 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 18 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3¼″ **Stroke** 4⅛″ **Taxable H.P.** 25.4
Piston Ring—Width Oil 1—3/16″ Comp. 3—⅛″
Diam. 3¼″ **Gap** .013″ on All
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 43° A.B.C.
Intake Clearance .004″ Hot
Exhaust Timing—Open 48° B.B.C. **Close** 10 A.T.C.
Exhaust Clearance .006″

Carburetor Stromberg UR23

Steering Caster ½° Camber 1½° Toe-in 1/16″

Cooling System Centrifugal **Type** Pump **Capacity** 4 Gals.

Clutch Borg & Beck **Facings** Moulded 5¾″ x 9″ x .133″ 2 Required

Gear Ratio Ring Gear 50 Pinion 11 Spiral Gears

Axle Spicer Semi-Floating

Brakes Midland Mechanical
Front 29⅛″ x 1½″ x ¼″ Clearance .010″
Rear 29⅛″ x 1½″ x ¼″ Clearance .010″
Hand 4 Wheels

Lining Moulded

Studebaker   Model C President   Year 1934

Battery Willard   **Type** WH-4-17   **Volts** 6   **Amps.** 160
Frame Connection Positive

Lighting

Mazda 1000	**Head Lights**	6-8, 32-32 C.P.
Mazda 63, 1158	**Dash, Tail and Stop**	6-8, 3-2-21 C.P.
Mazda 63	**Side Lights**	6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot   **Max. Chg. Rate** 9-12 Amps.   **Speed** 1800-2000 R.P.M.
Regulation 3rd Brush   **Cut-in** 6.4 Volts
Relay Air Gap .012″-.017″   **Contact Gap** .015″-.025″

Ignition   **Contact Breaker Gap** .020″
Spark Plug—Size 18 MM.   **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine   **Bore** $3\frac{1}{16}$″   **Stroke** $4\frac{1}{4}$″   **Taxable H.P.** 30
Piston Ring—Width Oil 1—$\frac{3}{16}$″   Comp. 3—$\frac{1}{8}$″
Diam. $3\frac{1}{16}$″   **Gap** .013″
Oiling—Type Pump   **Capacity** $6\frac{1}{2}$ Qts.

Valves   **Intake Timing—Open** 15 B.T.C.   **Close** 43° A.B.C.
Intake Clearance .004″ Hot
Exhaust Timing—Open 48° B.B.C.   **Close** 10° A.T.C.
Exhaust Clearance .006″ Hot

Carburetor Stromberg EE22

Steering Caster $\frac{1}{2}$°   Camber 1°   Toe-in $\frac{1}{16}$″

Cooling System Centrifugal   **Type** Pump   **Capacity** $4\frac{1}{2}$ Gals.

Clutch Long   **Facings** Moulded $5\frac{1}{2}$″ x $9\frac{3}{4}$″ x $\frac{9}{64}$″   2 Required

Gear Ratio Ring Gear 47   Pinion 10   Spiral Gears

Axle Spicer   Semi-Floating

Brakes Bendix Mechanical
- **Front** 28″ x $1\frac{3}{4}$″ x $\frac{1}{4}$″   Clearance .010″
- **Rear** 28″ x $1\frac{3}{4}$″ x $\frac{1}{4}$″   Clearance .010″
- **Hand** 4 Wheels

Lining Moulded

Studebaker Model 56 Year 1933

Battery Willard **Type** WH-1-13 **Volts** 6 **Amps.** 102
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 21-21 C.P.
Single Contact **Dash & Tail** 6-8, 3 C.P. **Stop** 15 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 11-13 Amps. **Speed** 1750-1850 R.P.M
Regulation 3rd Brush **Cut-in** 6.4 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order—1-4-2-6-3-5
Timing At T.D.C. Manual Control Full Adv.

Engine **Bore** 3-1/4″ **Stroke** 4-5/8″ **Taxable H.P.** 25.40
Piston Ring—Width 1-3/16″, 3-1/8″ **Diam.** 3-1/4″ **Gap** All Rings .013″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° A.T.C. **Close** 53° A.B.C.
Intake Clearance .004″
Exhaust Timing—Open 38° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .006″

Carburetor Stromberg EX22

Cooling System Centrifugal **Type** Pump **Capacity** 3-1/2 Gal.

Clutch Long **Facing**—Moulded 9-1/4″ x 5-1/2″ x 9/64″

Gear Ratio Ring Gear 48 Pinion 11 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 26-3/16″ x 1-1/2″ x 1/4″ Clearance .008″
- **Rear** 26-3/16″ x 1-1/2″ x 1/4″ Clearance .008″
- **Hand** All 4 Wheels

Lining—Moulded

Studebaker Model 73 and 82 Year 1933

Battery Willard **Type** WH-1-13 **Volts** 6 **Amps.** 102
Frame Connection Positive

Lighting Double Contact **Head Lights** 6-8, 21-21 C.P.
Single Contact **Dash & Tail** 6-8, 3 C.P. **Stop** 15 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 9-12 Amps. **Speed** 1800-2000 R.P.M.
Regulation 3rd Brush, Thermo. **Cut-in** 6.4 Volts
Relay Air Gap .012″-.017″ **Contact Gap** .015″-.025″

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 M.M. **Gap** .025
Firing Order—1-6-2-5-8-3-7-4
Timing 4° B.T.C. Manual Control Full Adv.

Engine **Bore** 3-1/16″ **Stroke** 4″ **Taxable H.P.** 30.0
Piston Ring—Width 1-3/16″, 3-1/8″ **Diam.** 3-1/16″ **Gap All Rings** .013″
Oiling—Type Pump **Capacity** 6-1/2 Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 43″ A.B.C.
Intake Clearance .004″
Exhaust Timing—Open 48° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance 006″

Carburetor Stromberg EE22

Cooling System Centrifugal **Type** Pump **Capacity** 4 Gals.

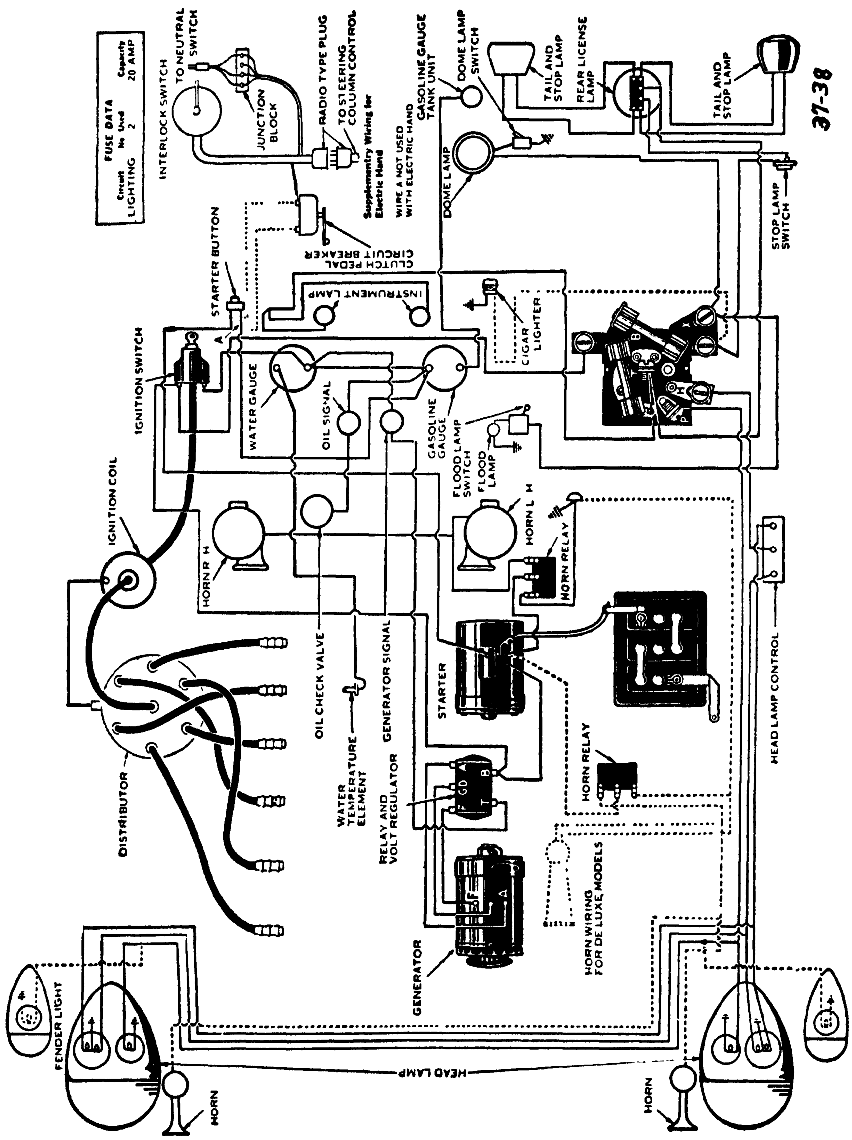
Clutch Long **Facing**—Moulded 9-1/4″ x 5-1/2″ x 9/64″

Gear Ratio Ring Gear 48 Pinion Gear 11 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 26-3/16″ x 1-1/2″ x 1/4″ Clearance .008″
- **Rear** 26-3/16″ x 1-1/2″ x 1/4″ Clearance .008″
- **Hand** All 4 Wheels

Lining—Moulded



TERRAPLANE WIRING DIAGRAM, 1937, 6-CYLINDER

Courtesy of Hudson Motor Car Company

Terraplane **Model 6-Cylinder** **Year 1937**

Battery National **Type** **Volts** 6-8 **Amps.** 105

Frame Connection Positive

Lighting Mazda 2331 D.C. **Head Lights** 6-8, 32-32 C.P.

Mazda 1158 **Stop Light** 6-8 Volts **Tail** 6-8, 3-21 C.P., D.C.

Mazda 55 **Parking Lights** 6-8, 1 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite

Max. Chg. Rate 12.5 Amps. Hot **Speed** 2400 R.P.M., Arm.

Regulation Voltage and Current **Cut-in** 7 Volts, 900 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Auto-Lite

Contact Breaker Gap .020″

Spark Plug—Size 14 M.M. **Gap** .022″

Firing Order 1-5-3-6-2-4

Timing T D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.60

Piston Ring—**Width** Oil 2—3/16″ Comp. 3—3/32″

Diam. 3″ **Gap** Oil .009″ Comp. .009″

Oiling—Type Pressure **Capacity** 5 Qts. **Pressure** 3 Lbs. Max.

Valves **Intake Timing**—**Open** 10½° B.T.C. **Close** 60° A.B.C.

Intake Clearance Hot .008″

Exhaust Timing—**Open** 50° B.B.C. **Close** 18° A.T.C.

Exhaust Clearance Hot .010″

Carburetor Carter 348S

Steering Caster 0° Camber 1° Toe-in 0″

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

Clutch Own **Facings** Cork 5⅜″ x 8⅝″ x .203″

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

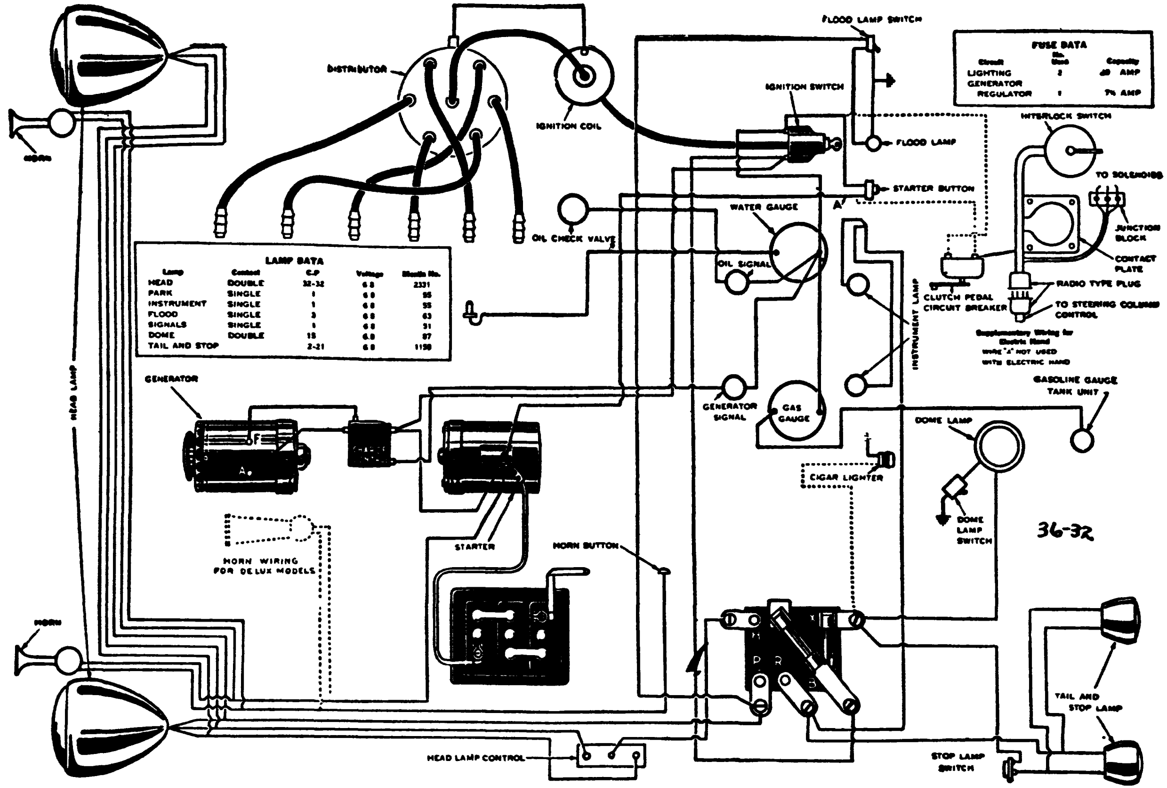
Brakes Bendix Mechanical

Front 22⅛″ x 1¾″ x 7/32″ Clearance .010″

Rear 22⅛″ x 1¾″ x 7/32″ Clearance .010″

Hand Rear Service

Lining Moulded **Diagram 37-38**



TERRAPLANE WIRING DIAGRAM, 1936, MODEL, 6-CYLINDER

Courtesy of Hudson Motor Car Company

Terraplane **Model 6-Cylinder** **Year 1936**

Battery National **Type** **Volts 6** **Amps. 120**
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 6-8, 32-32 C.P.
Stop Light 6-8, 21 C.P. **Tail** 6-8, 2 C.P.
Parking Lights 6-8, 1 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 13 Amps. Hot **Speed** 28 M.P.H.
Regulation 3rd Brush and Voltage Control **Cut-in** 7 Volts
Contact Gap

Ignition Auto-Lite
Contact Breaker Gap .020″
Spark Plug—Size 14 M.M. **Gap** .022″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 2—3/16″ Comp. 2—3/32″
Diam. 3″ **Gap** .009″-.011″
Oiling—Type Plunger **Capacity** 6 Qts.

Valves **Intake Timing—Open** 11° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 19° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter

Steering Caster 2° to 2½° Camber 1° to 1½° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 3¼ Gals.

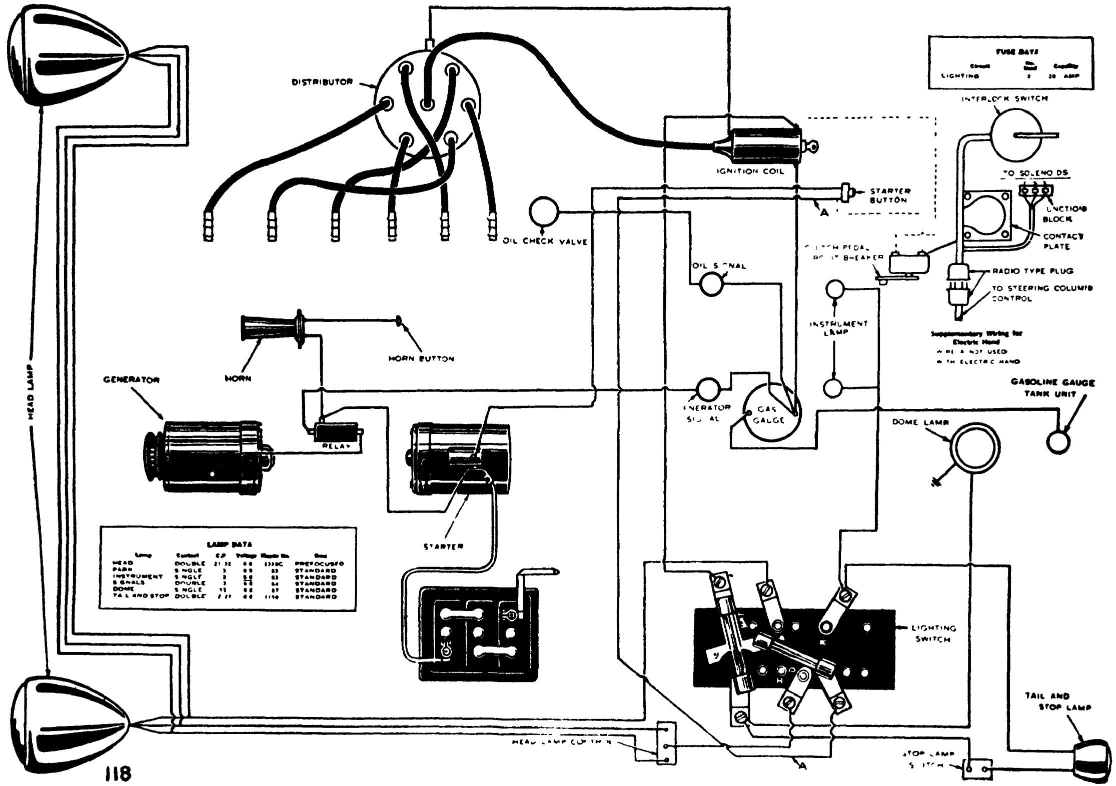
Clutch Own **Facings** Single Disc in Oil 5⅜″ x 8⅝″ x .203″ Cork

Gear Ratio 4.11 to 1 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 22⅛″ x 1¾″ x 7/32″ Clearance .010″
Rear 22⅛″ x 1¾″ x 7/32″ Clearance .010″
Hand Rear Service

Lining Moulded and Woven Diagram 36-32



TERRAPLANE WIRING DIAGRAM, 1935, MODEL SPECIAL 6

Courtesy of Hudson Motor Car Company

Terraplane Model Special 6 Year 1935

Battery National **Type** **Volts** 6 **Amps.** 105

Frame Connection Positive

Lighting Mazda 2320-C **Head Lights** 6-8, 21-32 C.P.

Mazda 64, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.

Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 13 Amps. **Speed** 2300 R.P.M. Armature

Regulation 3rd Brush **Cut-in** 6.4 Volts

Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .022″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6

Piston Ring—Width Oil 2—3/16″ Comp. 2—3/16″ **Diam.** 3″ **Gap** .006″

Oiling—Type **Capacity**

Valves **Intake Timing—Open** 11° B.T.C. **Close** 60° A.B.C.

Intake Clearance .006″ Hot

Exhaust Timing—Open 50° B.B.C. **Close** 19° A.T.C.

Exhaust Clearance .008″ Hot

Carburetor Carter W1

Steering Caster 3¼° Camber 1° Toe-in ⅛″

Cooling System Centrifugal **Type** Pump **Capacity** 4½ Gals.

Clutch Own **Facings** Cork 5⅜″ x 8⅝″ x .203″

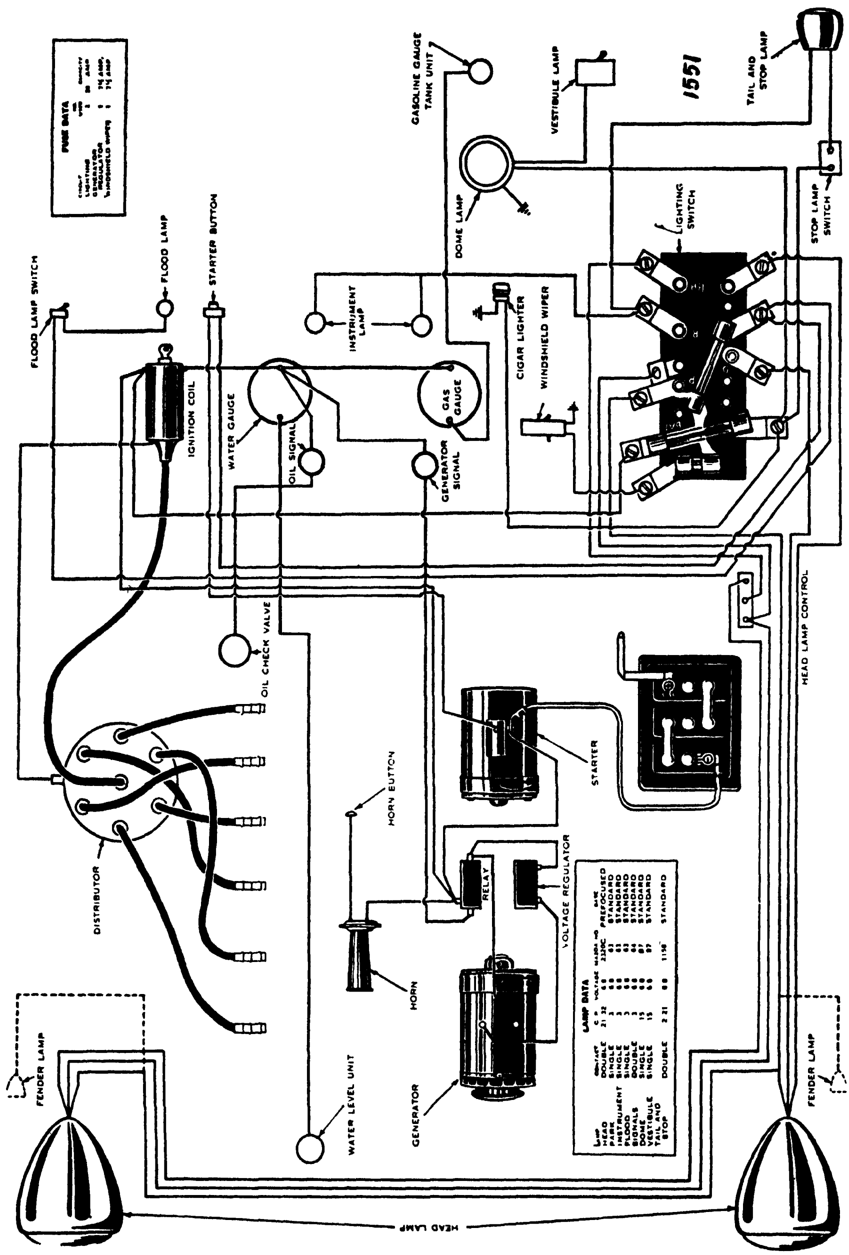
Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Mechanical Bendix
- **Front** 19 3/16″ x 1¾″ x 3/16″ Clearance Toe .008″ Heel .014″
- **Rear** 19 3/16″ x 1¾″ x 3/16″ Clearance Toe .008″ Heel .014″
- **Hand** 4 Wheels

Lining Moulded

Diagram 118



TERRAPLANE WIRING DIAGRAM, 1934, MODEL KS

Courtesy of Hudson Motor Car Company

Terraplane **Model KS** **Year 1934**

Battery National **Type** ST-3-17X **Volts** 6 **Amps.** 100
Frame Connection Positive

Lighting Mazda 2320-C **Head Lights** 6-8, 32-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Cold **Max. Chg. Rate** 22 Amps. **Speed** 2200 R.P.M.
Regulation 3rd Brush **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .022″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 1—1/8″, 1—3/16″ Comp. 2—3/32″
Diam. 3″ **Gap** .006″
Oiling—Type Splash **Capacity** 6 Qts.

Valves **Intake Timing—Open** 11° B.T.C. **Close** 60° A.T.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 19° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter W1

Steering Caster 1½° Camber 2° Toe-in 1/8″

Cooling System Centrifugal **Type** Pump **Capacity** 3 Gals.

Clutch Own **Facings** Cork 5½″ x 9″ x .203″ 9 Required

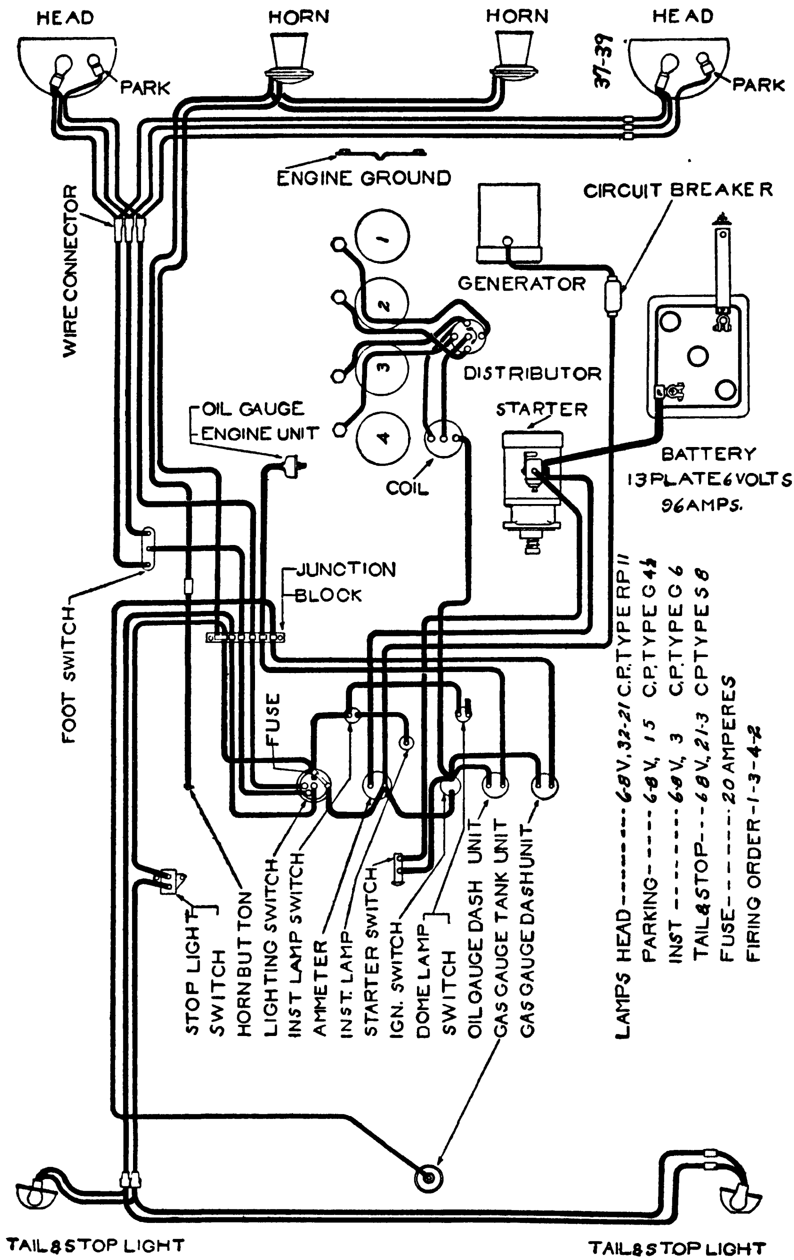
Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 19 3/16″ x 1¾″ x 3/16″ Clearance Heel .014″ Toe .008″
- **Rear** 19 3/16″ x 1¾″ x 3/16″ Clearance Heel .014″ Toe .008″
- **Hand** 4 Wheels

Lining Moulded

Diagram 1551



WILLYS WIRING DIAGRAM, 1937, MODEL 37
Courtesy of Willys-Overland Incorporated

Willys **Model 37** **Year 1937**

Battery U.S.L. **Type** **Volts** 6-8 **Amps.** 95
Frame Connection Negative

Lighting Type RP11 **Head Lights** 6-8, 32-21 C.P.
Type S8 **Stop Light** 6-8, 21 C.P. **Tail** 6-8, 3 C.P.
Type G4½ **Parking Lights** 6-8, 1.5 C.P.

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 14 Amps. Hot **Speed** 2000 R.P.M., Arm.
Regulation **Cut-in** 7 Volts, 720 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-3-4-2
Timing 5° A.T.C. Retard

Engine **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 15.63
Piston Ring—Width Oil 1—3/16″ Comp. 2—3/32″
Diam. 3⅛″ **Gap** Oil .007″ Comp. .007″
Oiling—Type Gear Pump **Capacity** 4 Qts.
Pressure 30 Lbs. @ 30 M.P.H.

Valves **Intake Timing—Open** T.D.C. **Close** 45° A.B.C.
Intake Clearance Hot .004″ Operating, .010″ Timing
Exhaust Timing—Open 40° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance Hot .006″ Operating, .010″ Timing

Carburetor Tillotson UIA

Steering Caster 3° Camber 2° Toe-in 3/32″

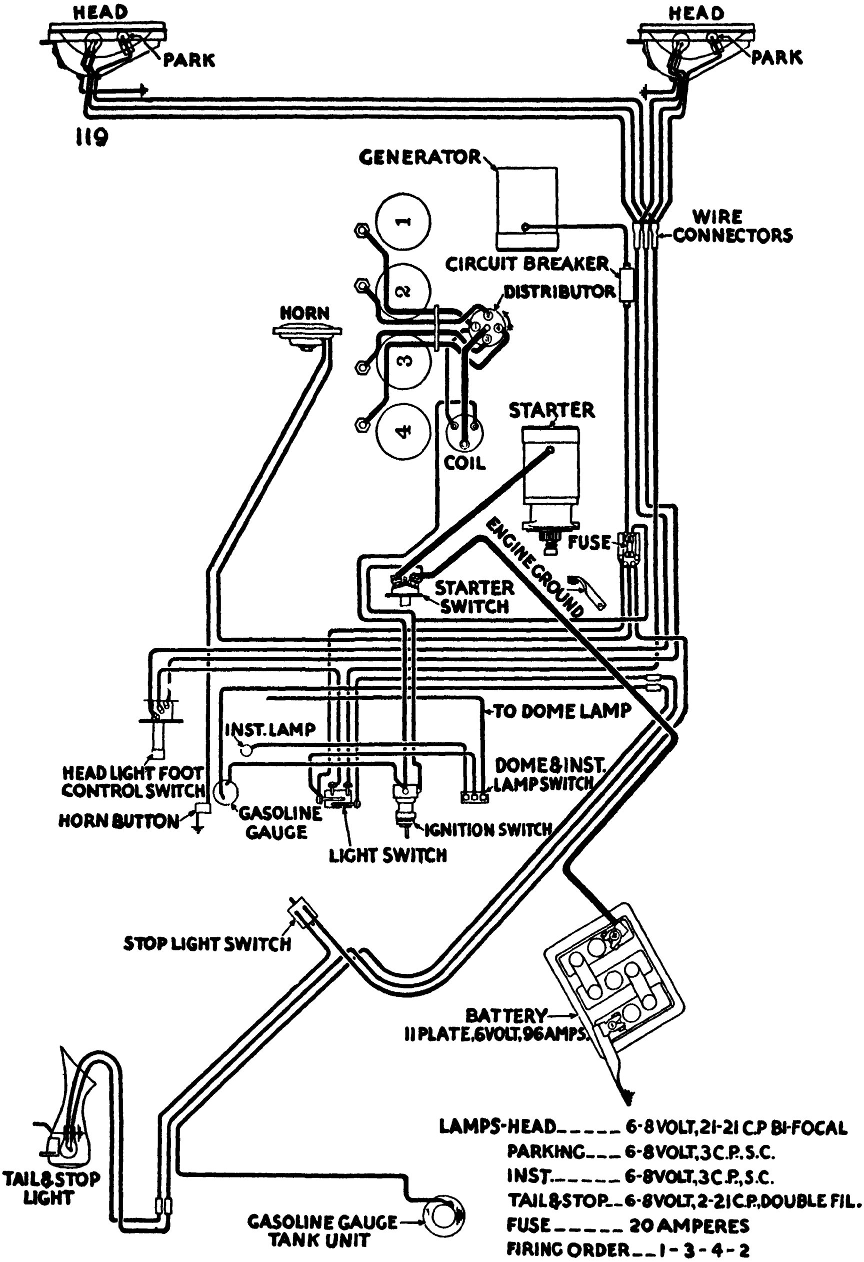
Cooling System Centrifugal **Type** Pump, Belt **Capacity** 11 Qts.

Clutch Borg & Beck **Facings** Moulded 5⅛″ x 7⅞″ x ⅛″ 2 Required

Gear Ratio Ring Gear 43 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Bendix Mechanical
Front 19 3/16″ x 1¾″ x 3/16″ Clearance .010″
Rear 19 3/16″ x 1¾″ x 3/16″ Clearance .010″
Hand All Four Wheels
Lining Moulded Diagram 37-39



WILLYS WIRING DIAGRAM, 1935, MODEL 77
Courtesy of Willys-Overland Incorporated

Willys **Model 77** **Year 1935**

Battery U.S.L. **Type** **Volts 6** **Amps. 96**
Frame Connection Negative

Lighting Mazda 1110 **Head Lights** 6-8, 21 C.P.
Dash, Tail and Stop 6-8, 3-2-21 C.P.
Single Contact **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 12 Amps. **Speed** 2350 R.P.M. Armature
Regulation 3rd Brush **Cut-in** 7.0 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap**
Spark Plug—Size 18 M.M. **Gap** .027″
Firing Order 1-3-4-2
Timing 4° B.T.C. Retard

Engine **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 15.6
Piston Ring—Width Oil 1—3/16″ Comp. 3—3/32″
Diam. 3⅛″ **Gap** .007″ on All
Oiling—Type Pump **Capacity** 4 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 45° A.B.C.
Intake Clearance .004″ Hot
Exhaust Timing—Open 40° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .006″ Hot

Carburetor Tillotson DIC

Steering Caster 1½° Camber 2° Toe-in 3/32″

Cooling System Centrifugal **Type** Pump **Capacity** 2¼ Gals.

Clutch Borg & Beck **Facings** Moulded 5⅛″ x 7⅞″ x ⅛″ 2 Required

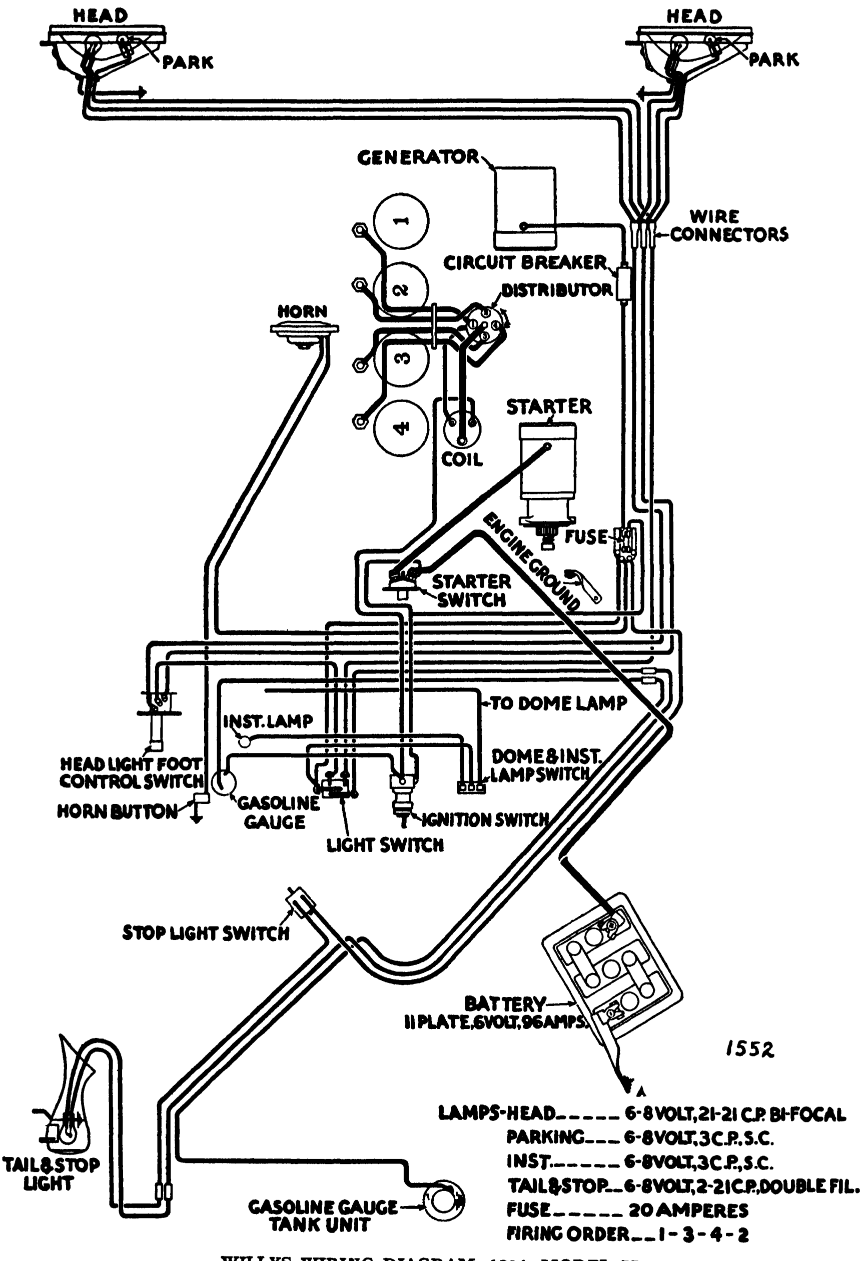
Gear Ratio Ring Gear 43 Pinion 10 Spiral Gears

Axle Own Semi-Floating

Brakes Mechanical Bendix
- **Front** 19 3/16″ x 1¾″ x 3/16″ Clearance .010″
- **Rear** 19 3/16″ x 1¾″ x 3/16″ Clearance .010″
- **Hand** 4 Wheels

Lining Moulded

Diagram 119



WILLYS WIRING DIAGRAM, 1934, MODEL 77

Courtesy of Willys-Overland Incorporated

Willys **Model 77** **Year 1934**

Battery U.S.L. **Type** CW-11A **Volts** 6 **Amps.** 84
Frame Connection Negative

Lighting Mazda 1110 **Head Lights** 6-8, 21-21 C.P.
Mazda 63, 1158 **Dash, Tail and Stop** 6-8, 3-2-21 C.P.
Mazda 63 **Side Lights** 6-8, 3 C.P.

Starter and Generator Auto-Lite

Generator Cold **Max. Chg. Rate** 17 Amps. **Speed** 2375 R.P.M.
Regulation 3rd Brush **Cut-in** 7-7.5 Volts
Relay Air Gap .010″-.030″ **Contact Gap** .025″-.035″

Ignition **Contact Breaker Gap** .018″
Spark Plug—Size 18 MM. **Gap** .025″
Firing Order 1-3-4-2
Timing 4° B.T.C.

Engine **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 15.6
Piston Ring—Width Oil 1—3/16″ Comp. 3—3/32″
Diam. 3⅛″ **Gap** .007″
Oiling—Type Pump **Capacity** 4 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 45° A.B.C.
Intake Clearance .004″ Hot
Exhaust Timing—Open 40° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .006″ Hot

Carburetor Tillotson D-1A

Steering Caster 1°-2° Camber 2° Toe-in 3/32″

Cooling System Centrifugal **Type** Pump **Capacity** 9 Qts.

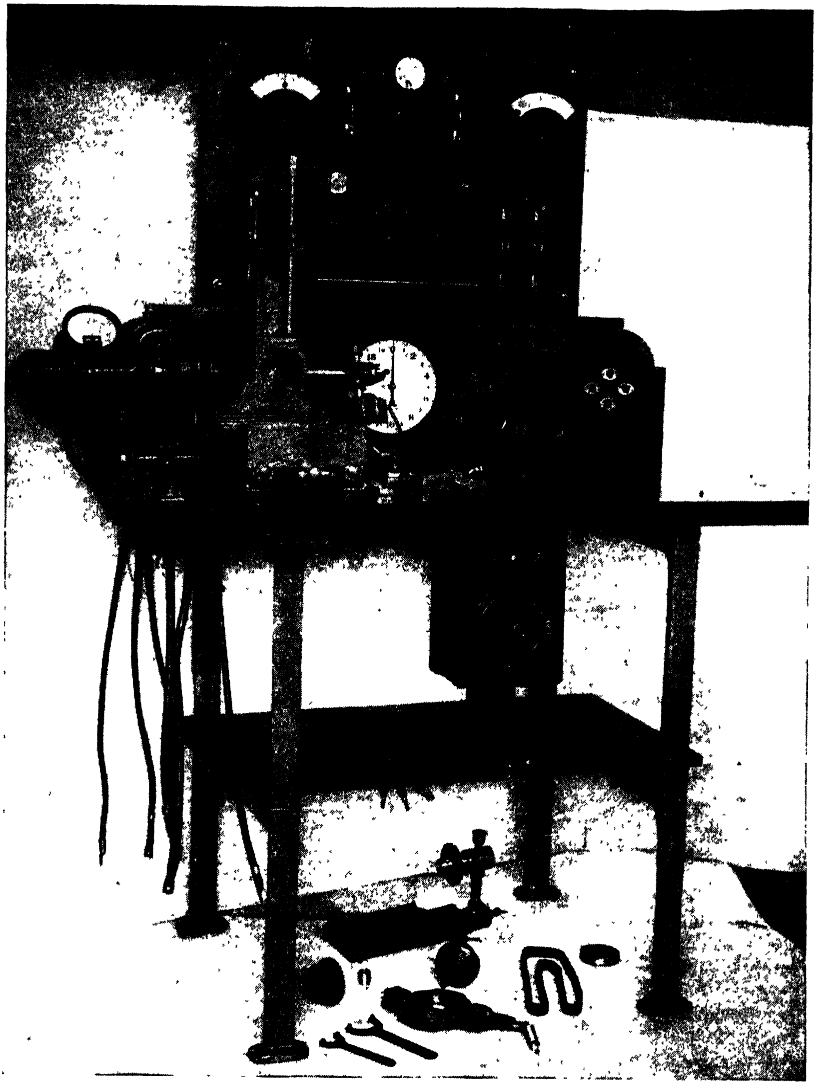
Clutch Own

Gear Ratio

Axle Own Semi-Floating

Brakes Bendix Mechanical
- **Front** 19 3/16″ x 1¾″ x 3/16″ Clearance .010″
- **Rear** 19 3/16″ x 1¾″ x 3/16″ Clearance .010″
- **Hand** 4 Wheels

Diagram 1552



WEIDENHOFF ELECTRICAL TEST BENCH COMPLETE

Index
Wiring Diagrams
and
Data Sheets
for
1938 Cars

WIRING DIAGRAMS AND DATA SHEETS

CHART OF ABBREVIATIONS

GENERAL

Amps.—Amperes
V.—Volts
C.P.—Candle Power
R.& L. of Firing Order—Right and left determined from driver's seat
Max. Chg. Rate—Maximum Charging Rate
R.P.M.—Revolutions per Minute
D.C.—Double Contact
MM.—Millimeters
Side Lights—Side or Parking Lights
Air Gap—Contacts Closed
Oil—Oil Ring
Comp.—Compression Ring

IGNITION AND VALVE TIMING

B.T.D.C. or B.T.C.—Before Top Dead Center
B.B.D.C. or B.B.C.—Before Bottom Dead Center
A B.D.C. or A.B.C.—After Bottom Dead Center
A.T.D.C. or A.T.C.—After Top Dead Center
T.D.C. at Retard—Top Dead Center; Spark Control Retarded
12° past T.D.C.—Piston 12° past T.D.C. Spark Control Retarded
2½" before T.D.C.—Piston 2½", on Flywheel, before T.D.C.
"Ret" at Retard—Marks "Ret" on Flywheel

LUBRICATION SYSTEM

Gals.—Gallons
Qts.—Quarts
Press.—Pressure to Main Bearings
Splash—Pressure Circulating Splash
Splash—Connecting Rod Dips

REAR AXLE

Semi—Semi-Floating
¾ Flt.—Three-quarters Floating
Full Flt.—Full Floating

CLUTCH

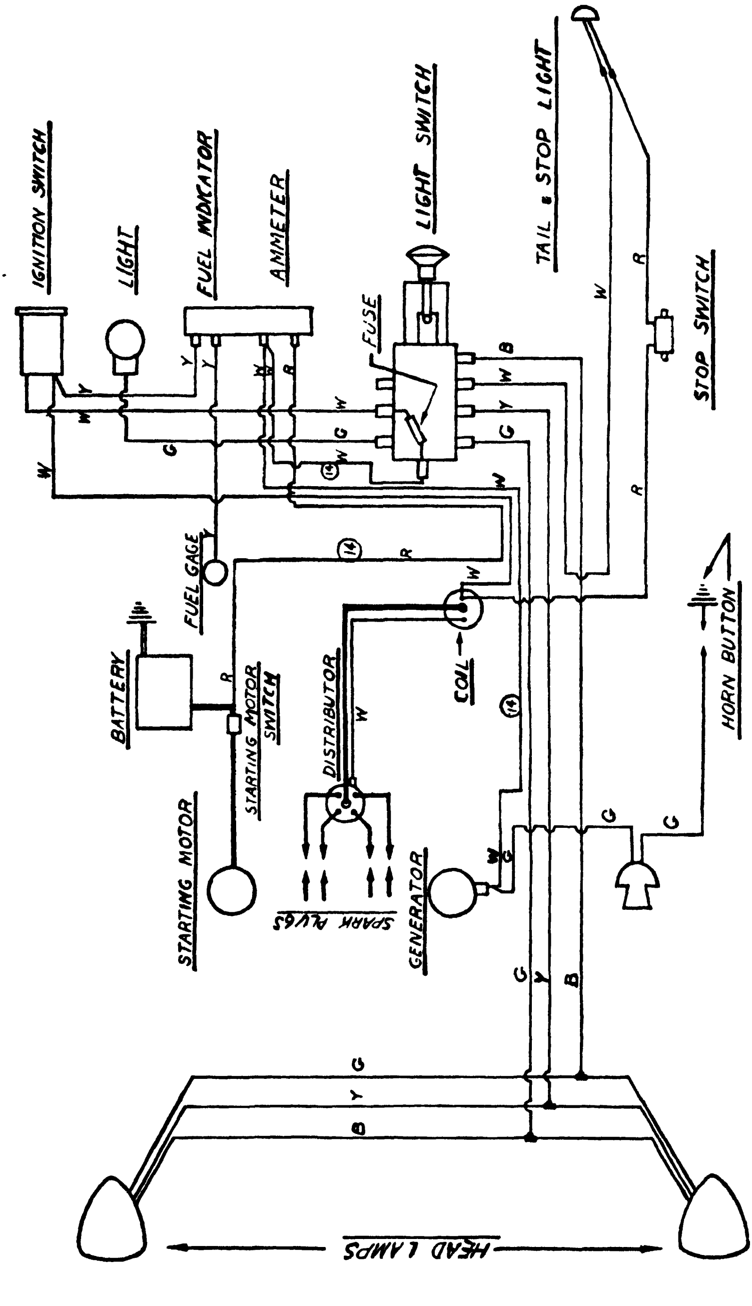
Disc.—Multiple disc, either wet or dry
Plate—Single or Double Plate Type

BRAKES

Front—Front Wheels
Rear—Rear Wheels
Hand—Hand Brake
Trans.—Transmission Brake

INDEX

1938 Wiring Diagrams and Data Sheets



AMERICAN BANTAM WIRING DIAGRAM, 1938, MODEL 4-CYLINDER
Courtesy of American Bantam Automobile Company

American Bantam **Model** **4-Cylinder** **Year 1938** **Series**

Battery Willard **Type** 11 Plates **Volts** 6 **Amps.** 65

Frame Connection

Lighting
Head Lights
Dash, Tail and Stop
Side Lights

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 10 Amps. **Speed** 2900 R.P.M.
Regulation **Cut-in** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018″-.022″
Spark Plug—Size **Gap** .025″
Firing Order 1-3-4-2
Timing 2° B.T.C.

Engine **Bore** 2.2″ **Stroke** 3″ **Taxable H.P.** 7.8
Piston Ring—Width Oil 1—1/8″, Comp. 2—3/32″
Diam. 2.2″ **Gap** .004″ to .006″
Oiling—Type Pressure and Splash **Capacity** 6 Pints

Valves **Intake Timing—Open** 19° B.T.C. **Close** 50° A.B.C.
Intake Clearance .006″ Warm
Exhaust Timing—Open 57° B.B.C. **Close** 12° A.T.C.
Exhaust Clearance .009″ Warm

Carburetor Tillotson

Cooling System Thermo **Type** **Capacity** 6 Qts.

Steering Camber 2¾°, Caster 5°, Toe In 3/32″ ± 1/32″

Clutch Rockford **Facings** Moulded 6½″ x 87/16″ x 1/8″ 2 Required

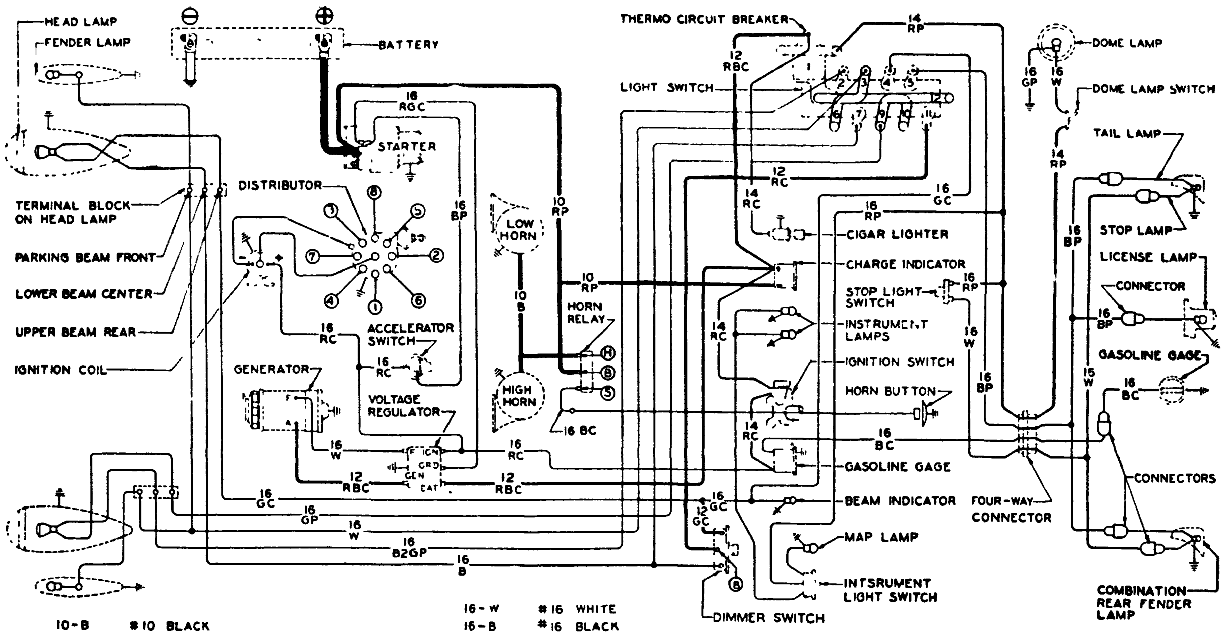
Gear Ratio Spiral Gears

Axle Semi-Floating

Brakes Mechanical
- **Front** 17″ x 1 1/8″ x 3/16″
- **Rear** 17″ x 1 1/8″ x 3/16″
- **Hand** Rear Service

Lining Semi-Moulded

Diagram 38-1



10-B	#10 BLACK	16-W	#16 WHITE
10-RP	#10 RED PARALLEL TRACERS	16-B	#16 BLACK
12-RC	#12 RED CROSSING TRACERS	16-RGC	#16 RED AND GREEN CROSSING TRACERS
12-RBC	#12 RED AND BLACK CROSSING TRACERS	16-B2GP	#16 BLACK WITH 2 GREEN PARALLEL TRACERS
12-GC	#12 GREEN CROSSING TRACERS	16-RP	#16 RED PARALLEL TRACERS
14-RP	#14 RED PARALLEL TRACERS	16-GP	#16 GREEN PARALLEL TRACERS
14-RC	#14 RED CROSSING TRACERS	16-BC	#16 BLACK CROSSING TRACERS
16-BP	#16 BLACK PARALLEL TRACERS	16-RC	#16 RED CROSSING TRACERS
		16-GC	#16 GREEN CROSSING TRACERS

BUICK WIRING DIAGRAM, 1938, SERIES 40-60

Courtesy of Buick Motor Company

Buick — Model 8-Cylinder — Year 1938 Series 40-60

Battery Delco-Remy **Type** 17EI-W **Volts** 6-8 **Amps.** 110
Frame Connection Negative

Lighting Mazda 2320L **Head Lights** 32-21 C.P., 6-8 Volts
1154 **Dash, Tail and Stop** 21-3 C.P., 6-8 Volts
55 **Side Lights** 1.5 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Cold **Max. Chg. Rate** 28-31 Amps. **Speed** 40 Miles per Hour
Delco-Remy **Regulation** 3rd Brush, Voltage **Cut-in** 6.4 to 7 Volts Cold
Relay Air Gap **Contact Gap** .018″-.025″

Ignition **Contact Breaker Gap** .0125″-.0175″
Delco-Remy **Spark Plug—Size** 14 M.M. A.C. **Gap** .023″-.028″
Firing Order 1-6-2-5-8-3-7-4
Timing 4° on 40, 6° on 60 full advance

Engine **Bore** 40-3$\frac{3}{32}$″, 60-3$\frac{7}{16}$″ **Stroke** 4$\frac{1}{8}$′, 4$\frac{5}{16}$″ **Taxable H.P.** 30 63
Piston Ring—Width Oil $\frac{3}{16}$″ Comp. $\frac{1}{8}$″ and $\frac{3}{32}$″
Diam. $\frac{3}{32}$″, 3$\frac{7}{16}$″ **Gap** Oil .010″-.015″ Comp. .010″-.015″
Oiling—Type Pump **Capacity** 40—6 Qts. 60—8 Qts.

Valves **Intake Timing—Open** 40—13°, 60—14° B.T.C. **Close** 40—60° A.B.C. 60—71° A.B.C.
Intake Clearance .0015″- 0035″
Exhaust Timing—Open 40—55°, 60—56° B.B.C. **Close** 40—22° A.T.C. 60—25° A.T.C.
Exhaust Clearance .0021″—.0039″

Carburetor Stromberg or Marvel

Cooling System Centrifugal **Type** Pump **Capacity** 40—13$\frac{1}{4}$ Qts.
60—17 Qts.

Steering Camber —$\frac{1}{4}$° to +1° Caster $\frac{7}{8}$° ± $\frac{3}{8}$° Reverse Toe In 0″

Clutch Plate **Facings** 40—10″ x 6″, 60—11″ x 6$\frac{1}{2}$″ Woven 2 Required

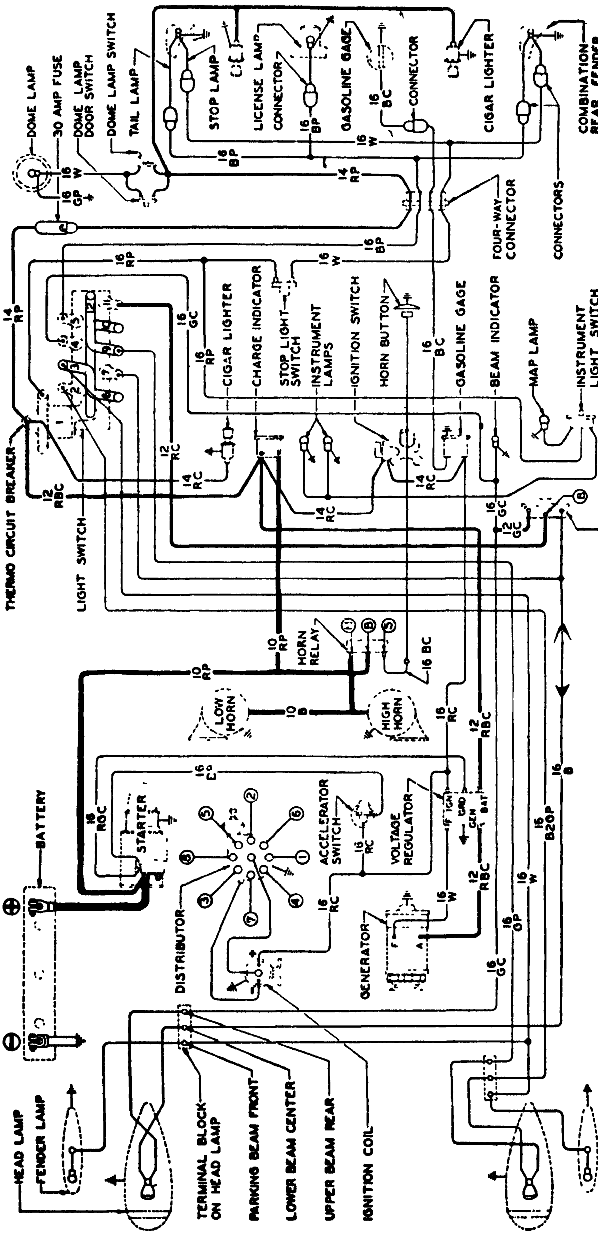
Gear Ratio 40—Ring Gear 44 Pinion 10
60—Ring Gear 39 Pinion 11

Axle Semi-Floating Hypoid Spiral Bevel Gears

Brakes Bendix Hydraulic
Front Primary 40—9$\frac{15}{16}$″ x 1$\frac{3}{4}$″ x $\frac{3}{16}$″ 60—9$\frac{15}{16}$″ x 2″ x $\frac{3}{16}$″
Rear Secondary 40—12$\frac{3}{4}$″ x 1$\frac{3}{4}$″ x $\frac{3}{16}$″ 60—12$\frac{3}{4}$″ x 2″ x $\frac{3}{16}$″
Hand Rear Service

Lining Primary Shoe Woven, Secondary Shoe Moulded

Diagram 38-2



10-B	#10	BLACK
10-RP	#10	RED PARALLEL TRACERS
12-RC	#12	RED CROSSING TRACERS
12-RBC	#12	RED AND BLACK CROSSING TRACERS
12-GC	#12	GREEN CROSSING TRACERS
14-RP	#14	RED PARALLEL TRACERS
14-RC	#14	RED CROSSING TRACERS
16-BP	#16	BLACK PARALLEL TRACERS
16-W	#16	WHITE
16-B	#16	BLACK
16-RGC	#16	RED AND GREEN CROSSING TRACERS
16-B2GP	#16	BLACK WITH 2 GREEN PARALLEL TRACERS
16-RP	#16	RED PARALLEL TRACERS
16-GP	#16	GREEN PARALLEL TRACERS
16-BC	#16	BLACK CROSSING TRACERS
16-RC	#16	RED CROSSING TRACERS
16-GC	#16	GREEN CROSSING TRACERS

BUICK WIRING DIAGRAM, 1938, SERIES 80-90

Courtesy of Buick Motor Company

Buick **Model 8-Cylinder** **Year 1938 Series 80-90**

Battery Delco-Remy **Type** 17E1-W **Volts** 6-8 **Amps.** 110
Frame Connection Negative

Lighting Mazda 2320L **Head Lights** 32-21 C.P. 6-8 Volts
1154 **Dash, Tail and Stop** 21-3 C.P., 6-8 Volts
55 **Side Lights** 1.5 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator **Max. Chg. Rate** 28-31 Amps. **Speed** 40 Miles per Hour
Delco-Remy **Regulation** 3rd Brush, Voltage **Cut-in** 6.4 to 7 Volts Cold
Relay Air Gap **Contact Gap** .018″-.025″

Ignition **Contact Breaker Gap** .0125″-.0175″
Delco-Remy **Spark Plug—Size** 14 M.M. A.C. **Gap** .023″-.028″
Firing Order 1-6-2-5-8-3-7-4
Timing 6° Full Advanced

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81
Piston Ring—Width Oil 3/16″ Com., 1/8″ and 3/32″
Diam. 3 7/16″ **Gap** Oil .010″-.015″
Oiling—Type Pump **Capacity** 9 Qts.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance .0015″-.0035″
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance .0021″-.0039″

Carburetor Stromberg or Marvel

Cooling System Centrifugal **Type** Pump **Capacity** 17 Qts.

Steering Camber —1/4° to +1° Caster Reverse 7/8° ± 3/8° Reverse Toe In 0″

Clutch Plate **Facings** Woven 11″ x 6 1/2″ 2 Required

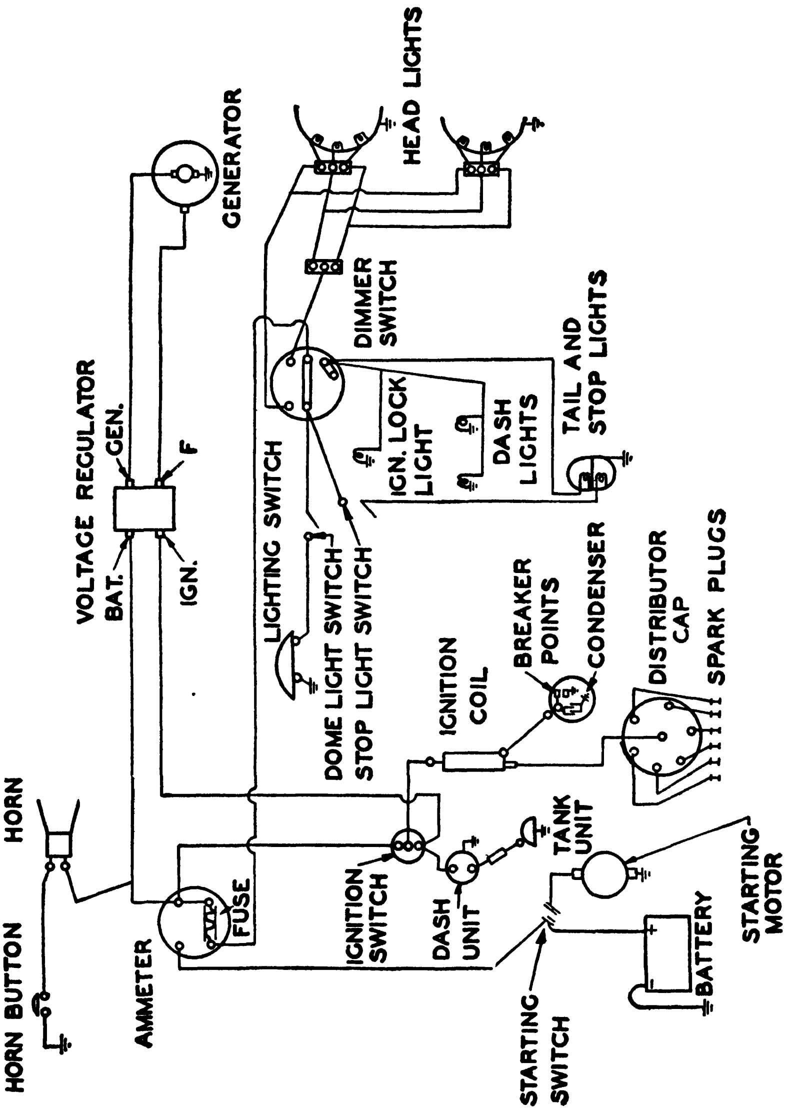
Gear Ratio 80—Ring Gear 46 Pinion 11
90—Ring Gear 41 Pinion 9

Axle Semi-Floating Hypoid Spiral Bevel Gears

Brakes Bendix Hydraulic
- **Front** Primary 80— 9 15/16″ x 2″ x 3/16″ 90—12 1/16″ x 2″ x 1/4″
- **Rear** Secondary 80—12 3/4″ x 2″ x 3/16″ 90—14 3/4″ x 2″ x 1/4″
- **Hand** Rear Service

Lining Primary Shoe Woven, Secondary Shoe Moulded

Diagram 38-3



CHEVROLET WIRING DIAGRAM, 1938, MODEL 6-CYLINDER
Courtesy of Chevrolet Motor Company

Chevrolet Model 6-Cylinder **Year 1938 Series**

Battery Delco **Type** 17M **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Head Lights** 6-8 Volts
Dash, Tail and Stop 6-8 Volts
Side Lights 6-8 Volts

Starter and Generator Delco-Remy

Generator Cold **Max. Chg. Rate** 26-30 Amps. **Speed** 35 M.P.H.
Regulation 3rd Brush, Voltage **Cut-in** 7.5 Volts
Relay Air Gap .060″-.070″ **Contact Gap** .015″-.025″

Ignition Delco **Contact Breaker Gap** .018″
Spark Plug—Size A.C. 46 **Gap** .040″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3½″ **Stroke** 3¾″ **Taxable H.P.** 29.4
Piston Ring—Width Oil 1—3/16″ Comp. 2—⅛″
Diam. 3½″ **Gap** .005″
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 9° B.T.C. **Close** 29° A.B.C.
Intake Clearance .006″ to .008″ Hot
Exhaust Timing—Open 52° B.B.C. **Close** 1° B.T.C.
Exhaust Clearance .013″ to .015″ Hot

Carburetor Carter WL-1¼″

Cooling System Centrifugal **Type** Pump **Capacity** 14 Qts.

Steering Camber ½° Caster 1¾° Toe In 5/64″

Clutch Plate **Facings** Woven 6¼″ x 9″ x ⅛″ 2 Required

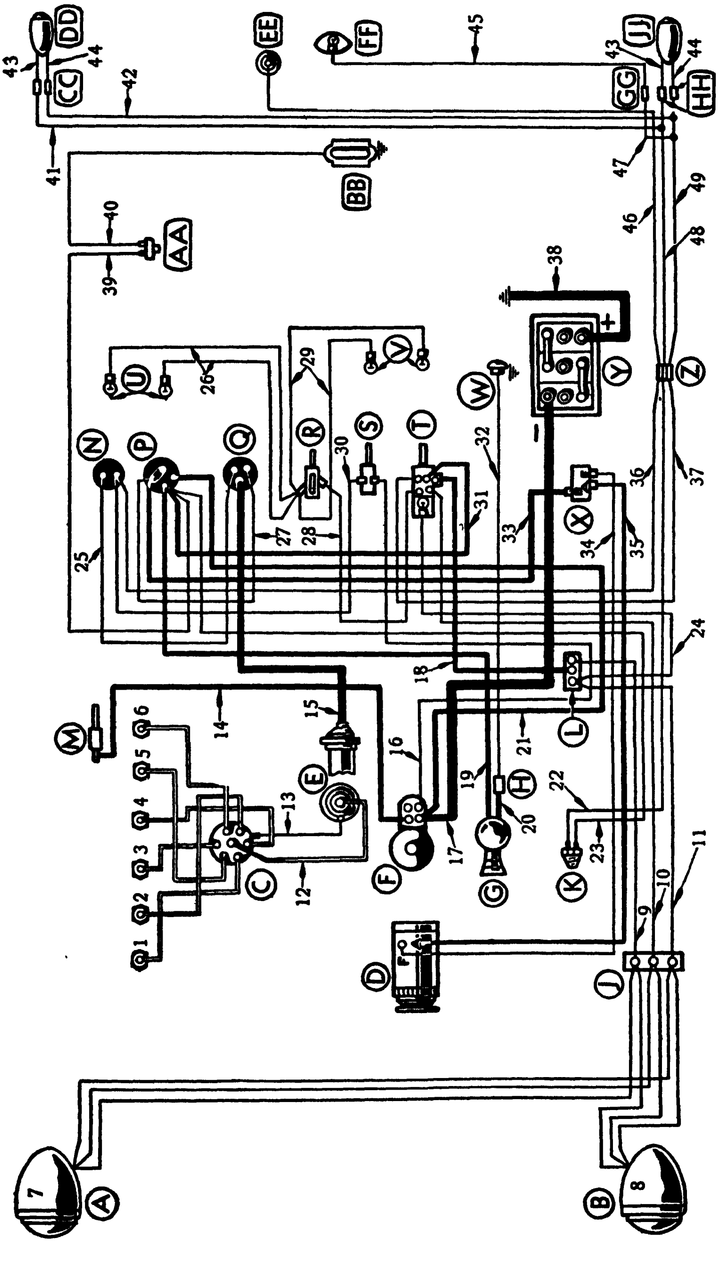
Gear Ratio 4.22 to 1

Axle Semi-Floating Hypoid Gears

Brakes Bendix Hydraulic
- **Front** 22⅝″ x 1¾″ x 3/16″ Clearance Slight Drag
- **Rear** 22⅝″ x 1¾″ x 3/16″ Back 4 Notches
- **Hand** Rear Service

Lining Moulded

Diagram 38-4



CHRYSLER WIRING DIAGRAM, 1938, MODEL 6-CYLINDER
Courtesy of Chrysler Corporation

Chrysler **Model 6-Cylinder** **Year 1938** **Series Royal**

Battery	Willard	**Type** 15 Plate	**Volts** 6	**Amps.** 119
		Frame Connection	Positive	
Lighting	Mazda 2331	**Head Lights**	32-32 C.P., 6-8 Volts	
	Mazda 55-1158	**Dash, Tail and Stop**	1½-2-21 C.P., 6-8 Volts	
	Mazda 55	**Side Lights**	1½ C.P., 6-8 Volts	

Starter and Generator Auto-Lite

Generator	Hot	**Max. Chg. Rate** 28 Amps.	**Speed** 1900 to 2430 R.P.M.
		Regulation 3rd Brush, Voltage	**Cut-in**
		Relay Air Gap	**Contact Gap**

Ignition **Contact Breaker Gap** .020″

Spark Plug—Size 14 M. M. Champion **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing Cast-Iron Head T.D.C. Aluminum Head 3° A.T.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 27.34

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″

Diam. 3⅜″ **Gap** .007″ to .015″

Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 8° B.T.C. **Close** 42° A.B.C.

Intake Clearance .008″ Hot

Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C.

Exhaust Clearance .010″ Hot

Carburetor Carter BB

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gals.

Steering Caster ½° to 2½° Camber −¼° to +½° Toe In 1/16″

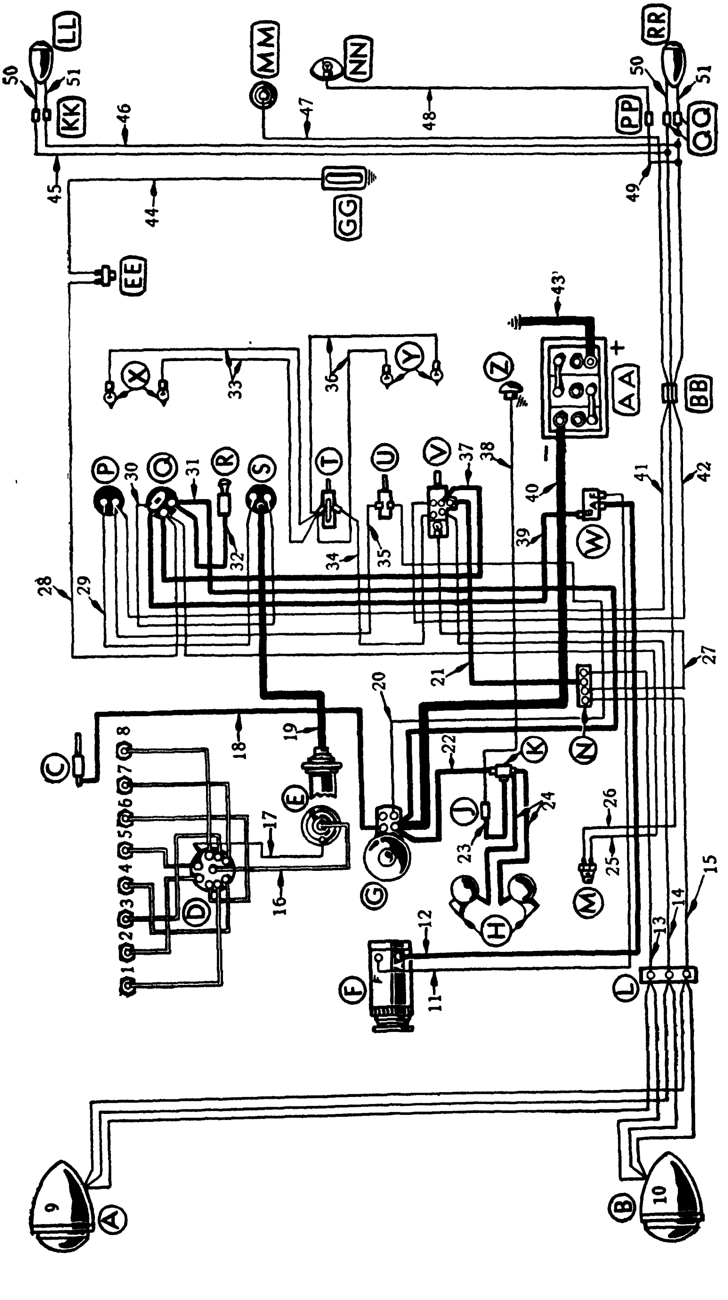
Clutch Borg & Beck **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Hypoid Gears

Axle Semi-Floating

Brakes Lockheed Hydraulic	**Front**	19½″ x 2″ x 13/64″	Clearance Heel .006″	Toe .010″
	Rear	19½″ x 2″ x 13/64″	Clearance Heel .006″	Toe .010″
	Hand	17 1/16″ x 2″ x 5/32″	Trans. Clearance .025″	

Lining Moulded Diagram 38-5



CHRYSLER WIRING DIAGRAM, 1938, MODEL 8-CYLINDER
Courtesy of Chrysler Corporation

Chrysler Model 8-Cylinder Year 1938 Series Imperial

Battery Willard **Type** 17 Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 55-1158 **Dash, Tail and Stop** 1½-3-21 C.P., 6-8 Volts
Mazda 55 **Side Lights** 1½ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 2200 R.P.M.
Regulation 3rd Brush, Voltage **Cut-in**
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018″
Spark Plug—Size 14 M. M. Champion **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing Cast-Iron Head 3° B.T.C., Aluminum Head T.D.C.

Engine **Bore** 3¼″ **Stroke** 4½″ **Taxable H.P.** 33.80
Piston Ring—Width Oil 2—$\frac{5}{32}$″ Comp. 2—⅛″
Diam. 3¼″ **Gap** .007″ to .015″
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 44° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 46° B.B.C. **Close** 4° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Stromberg AAV2

Cooling System Centrifugal **Type** Pump **Capacity** 20 Qts.

Steering Caster ½° to 2½° Camber −¼° to +½° Toe In $\frac{1}{16}$″

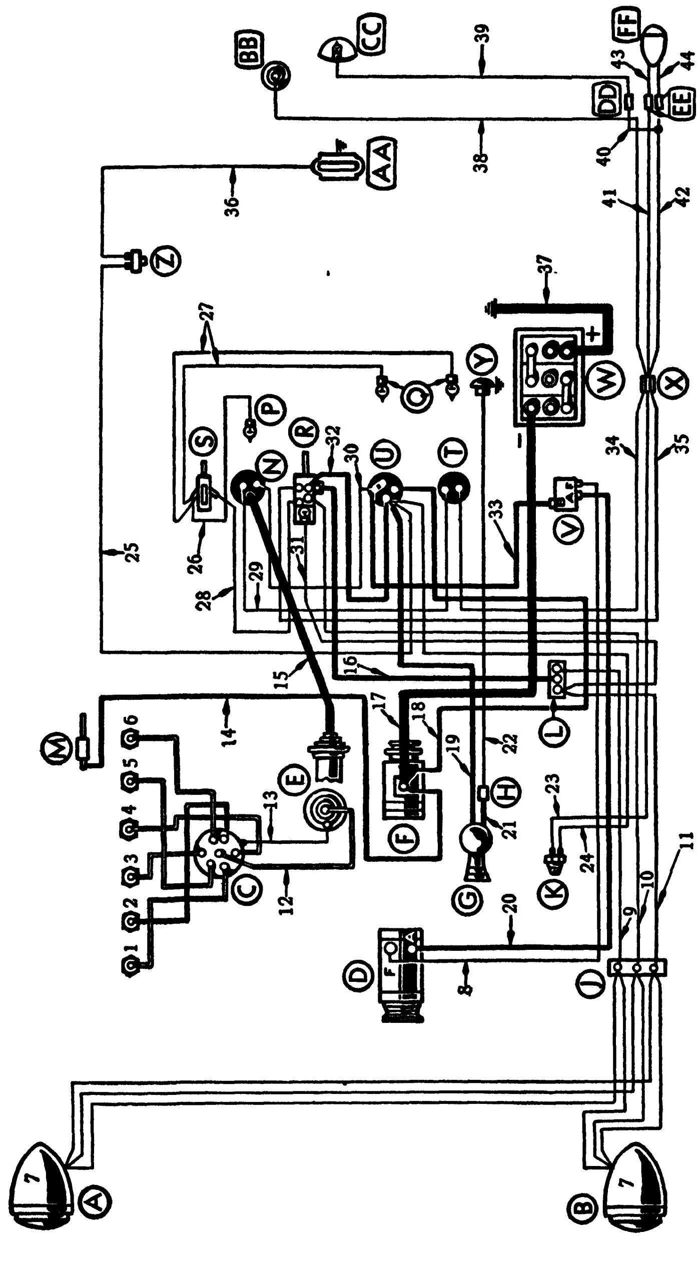
Clutch Borg & Beck **Facings** Woven 6⅛″ x 11″ x ⅛″ 2 Required

Gear Ratio Ring Gear 43 Pinion 11 Hypoid Gears

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front 21$\frac{9}{16}$″ x 2″ x 1$\frac{3}{64}$″ Clearance Heel .006″ Toe .010″
Rear 21$\frac{9}{16}$″ x 2″ x 1$\frac{3}{64}$″ Clearance Heel .006″ Toe .010″
Hand 17$\frac{1}{16}$″ x 2″ x $\frac{5}{32}$″ Trans. Clearance .025″

Lining Moulded Diagram 38-6



DE SOTO WIRING DIAGRAM, 1938, MODEL 6-CYLINDER
Courtesy of Chrysler Corporation

De Soto **Model 6-Cylinder** **Year 1938** **Series**

Battery Willard **Type** 15 Plate **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 55 & 1158 **Dash, Tail and Stop** 1½, 3, 21 C.P., 6-8 Volts
Mazda 55 **Side Lights** 1½ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 2420 R.P.M.
Regulation 3rd Brush, Voltage **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 M. M., Auto Lite **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing Standard T.D.C., Aluminum Head 3° A.T.C.

Engine **Bore** 3⅜″ **Stroke** 4¼″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** .007″ to .015″
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 8° B.T.C. **Close** 42° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Carter BB

Cooling System Centrifugal **Type** Pump **Capacity** 5 Gallons

Steering Caster ½° Camber ¼° Toe In 1/16″

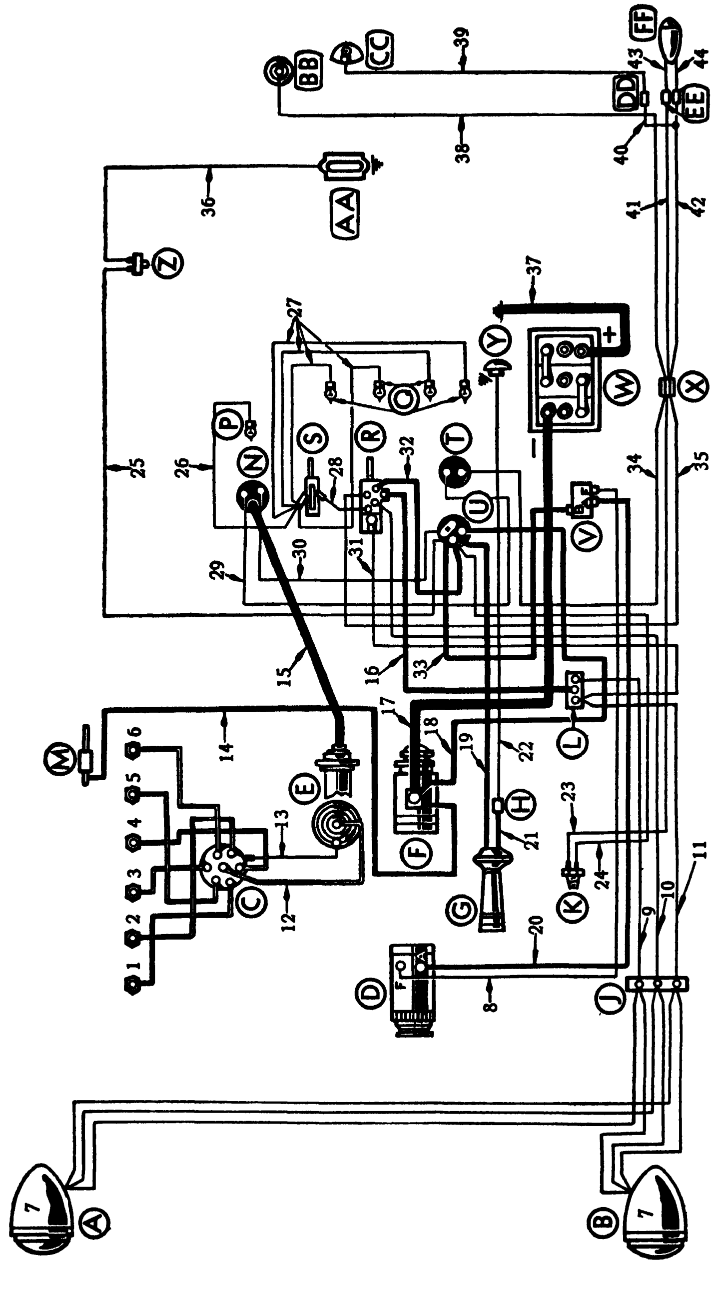
Clutch Borg & Beck **Facings** Woven 6″ x 10″ x ⅛″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Hypoid Gears

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front 18¾″ x 2″ x 13/64″ Clearance Heel .006″ Toe .010″
Rear 18¾″ x 2″ x 13/64″ Clearance Heel .006″ Toe .010″
Hand 17 1/16″ x 2″ x 5/32″ Transmission Clearance .025″

Lining Moulded Diagram 38-7



DODGE WIRING DIAGRAM, 1938, MODEL 6-CYLINDER
Courtesy of Chrysler Corporation

Dodge **Model** 6-Cylinder **Year** 1938 **Series**

Battery Willard **Type** 15 Plate **Volts** 6 **Amps.** 92
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 55, 1158 **Dash, Tail and Stop** $1\frac{1}{2}$-21-3 C.P., 6-8 Volts
Mazda 55 **Side Lights** $1\frac{1}{2}$ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 2500 R.P.M.
Regulation 3rd Brush, Voltage **Cut-in** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .022″
Spark Plug—**Size** 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** $3\frac{1}{4}$″ **Stroke** $4\frac{3}{8}$″ **Taxable H.P.** 25.35
Piston Ring—**Width** Oil 2—$\frac{5}{32}$″ Comp. 2—$\frac{1}{8}$″
Diam. $3\frac{1}{4}$″ **Gap** .007″
Oiling **Type** Pump **Capacity** 5 Qts.

Valves **Intake Timing**—**Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—**Open** 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg EXV2

Cooling System Centrifugal **Type** Pump **Capacity** 15 Qts.

Steering Camber $\frac{1}{2}$° Caster 2° Toe In 0″

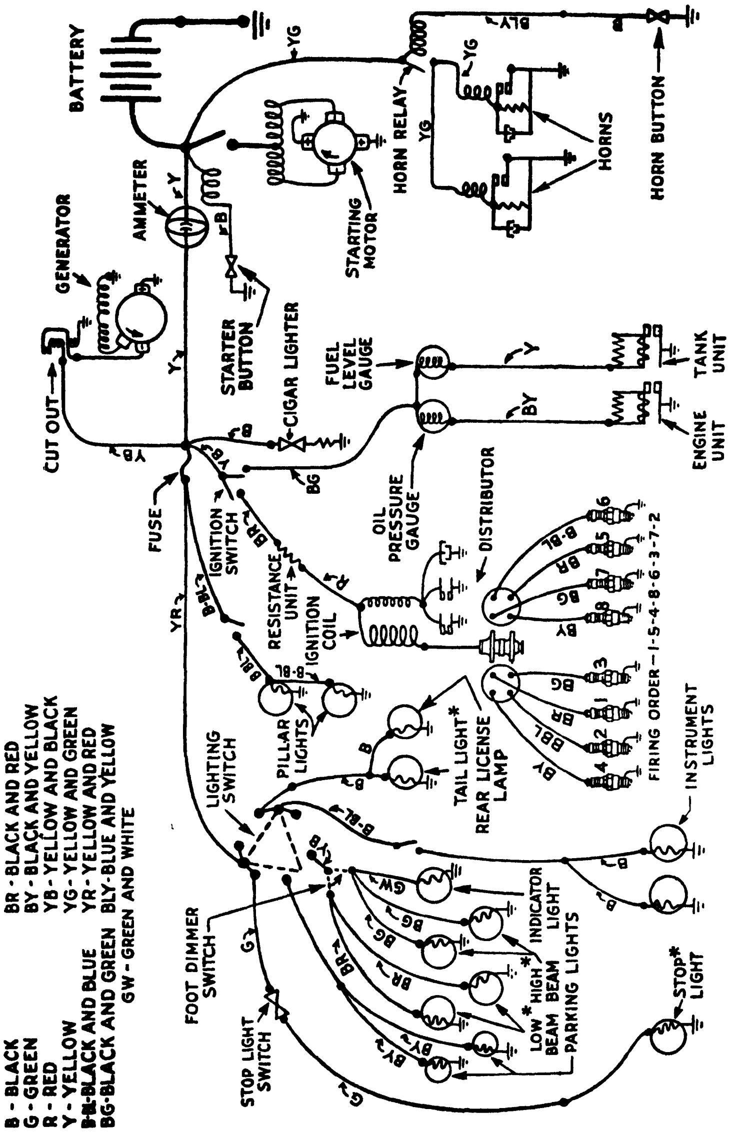
Clutch Borg & Beck **Facings** Woven 6″ x 10″ x $\frac{1}{8}$″ 2 Required

Gear Ratio Ring Gear 41 Pinion 10 Hypoid Gear

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front $18\frac{3}{4}$″ x 2″ x $\frac{13}{64}$″ Clearance Heel .006″ Toe .010″
Rear $18\frac{3}{4}$″ x 2″ x $\frac{13}{64}$″ Clearance Heel .006″ Toe .010″
Hand $17\frac{3}{4}$″ x 2″ x $\frac{5}{32}$″ Trans. Clearance .025″
Lining Moulded

Diagram 38-8



FORD WIRING DIAGRAM, 1938, SERIES V-8-85, V-8-60
Courtesy of Ford Motor Company

Ford **Model 8-Cylinder** **Year 1938** **Series V-8-85, V-8-60**

Battery Own **Type** **Volts 6** **Amps. 100**
Frame Connection Positive

Lighting **Head Lights** 6-8 Volts
Dash, Tail and Stop 6-8 Volts
Side Lights 6-8 Volts

Starter and Generator Own

Generator Own **Max. Chg. Rate** 18 Amps. **Speed**
Regulation 3rd Brush **Cut-in** 7 Volts, 10 M.P.H.
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″
Spark Plug—Size 60—14 M.M., 85-18 M.M. **Gap** .025″
Firing Order 1-5-4-8-6-3-7-2
Timing

Engine **Bore** 3.062″ **Stroke** 3.75″ **Taxable H.P.** 30
Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″
Diam. 3.062″ **Gap** Oil .005″ Comp. .009″
Oiling—Type Pump **Capacity** 5 Qts. 85; 4 Qts. 60

Valves **Intake Timing—Open** 9½° B.T.C. **Close** 54½° A.B.C.
Intake Clearance .013″
Exhaust Timing—Open 57½° B.B.C. **Close** 6½° A.T.C.
Exhaust Clearance .013″

Carburetor Stromberg

Cooling System Centrifugal **Type** Pump **Capacity** 22 Qts. 85
15¼ Qts. 60

Steering Camber 1° Caster 8° Toe In 1/16″

Clutch Plate **Facings** 60—Woven 6″ x 8½″ x ⅛″ 2 Required
80—5¾″ x 9″ x .137″ 2 Required

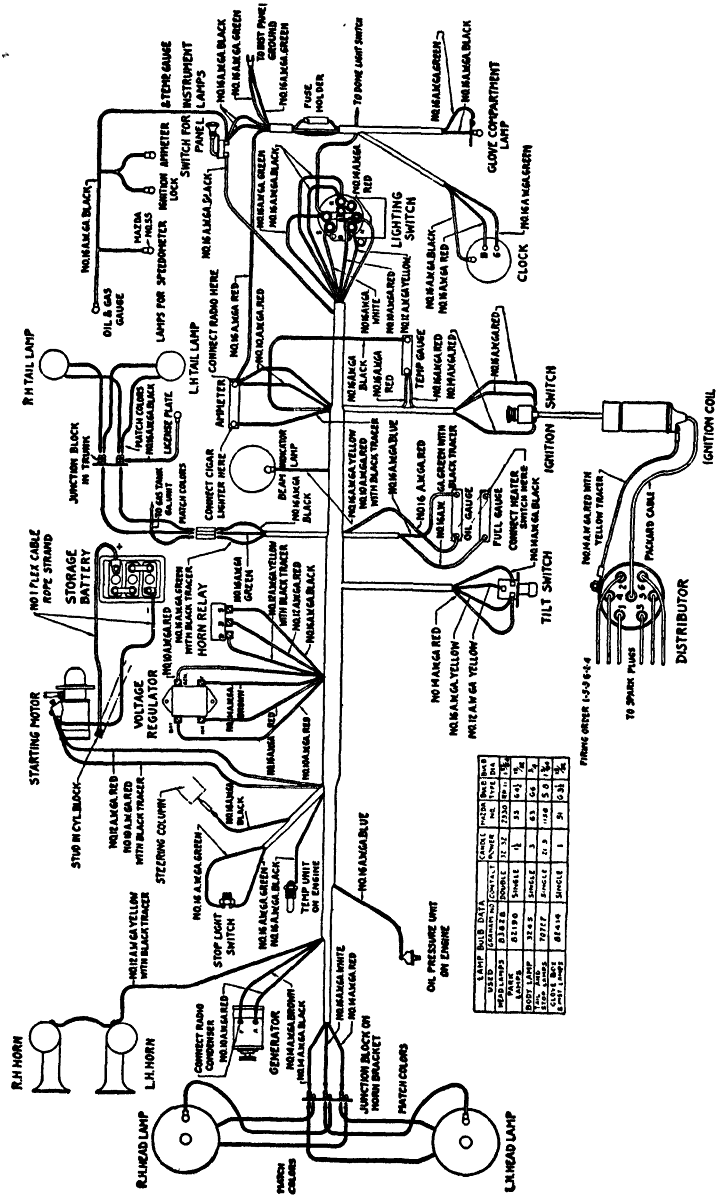
Gear Ratio 60—Ring Gear 40 Pinion 9; 85—34 and 9

Axle ¾ Floating Spiral Gears

Brakes Own Mechanical
- **Front** 26½″ x 1¾″ x 11/64″ Clearance .010″
- **Rear** 26½″ x 1¾″ x 11/64″ Clearance .010″
- **Hand** 4 Wheels

Lining Woven

Diagram 38-9



LAMP BULB DATA						
USED	GRAHAM NO	CONTACT	CANDLE POWER	MAZDA NO.	BULB TYPE	BULB DIA
HEADLAMPS	B3828	DOUBLE	32-32	2330	RP 11	1 3/8
PARK LAMPS	B2190	SINGLE	1½	55	G4½	19/32
BODY LAMP	3245	SINGLE	3	63	G6	3/4
TAIL AND STOP LAMPS	70727	SINGLE	21-3	1158	S8	1 3/64
GLOVE BOX & INST LAMPS	B8414	SINGLE	1	51	G3½	15/32

GRAHAM WIRING DIAGRAM, 1938, SERIES SUPERCHARGER AND CUSTOM
Courtesy of Graham-Paige Motors Corporation

Graham **Model 6-Cylinder** **Year 1938 Series Supercharger and Custom**

Battery Willard **Type** 15 Plate **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2330 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 51 & 55 **Dash, Tail and Stop** 1-3-21 C.P., 6-8 Volts
Mazda 1158 **Side Lights** 1½ C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 3600 R.P.M.
Regulation Voltage **Cut-in** 6.5 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018″
Spark Plug—Size 14 M.M. Champion **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing Exhaust Close Mark Full Advance

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35
Piston Ring—Width Oil 1—3/16″ Comp. 2—3/32″
Diam. **Gap** .010″
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 47½° A.B.C.
Intake Clearance .010″
Exhaust Timing—Open 47½° B.B.C. **Close** 4½° A.T.C.
Exhaust Clearance .010″

Carburetor Marvel

Cooling System Centrifugal **Type** Pump **Capacity** 15½ Qts.

Steering Camber 1° Caster 3° Toe In ⅛″

Clutch Long **Facings** Moulded 6″ x 9½″ x ⅛″ 2 Required

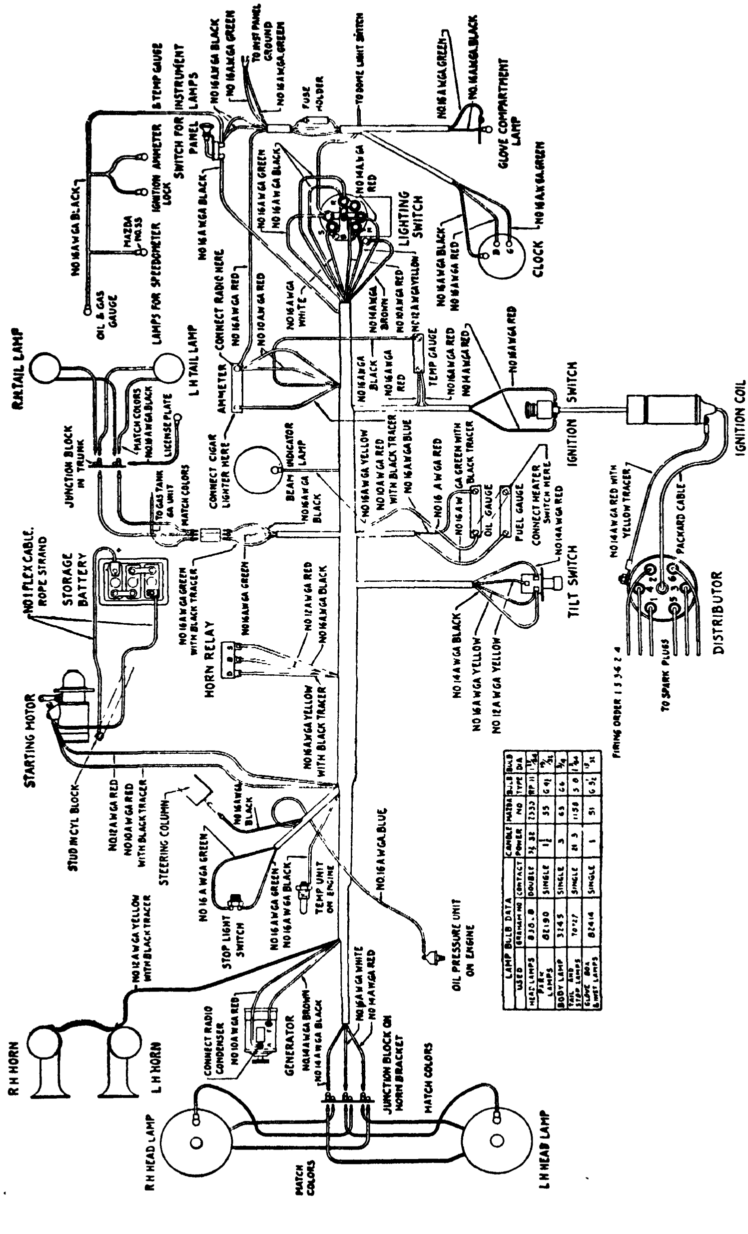
Gear Ratio Ring Gear 47 Pinion 11

Axle Semi-Floating Hypoid Gears

Brakes Lockheed Hydraulic
- **Front** 23″ x 1¾″ x ¼″ Clearance Heel .006″ Toe .010″
- **Rear** 23″ x 1¾″ x ¼″ Clearance Heel .006″ Toe .010″
- **Hand** 17¾″ x 2″ x 5/32″ Transmission Clearance 1/32″

Lining Moulded

Diagram 38-10



LAMP BULB DATA			CANDLE POWER	MAZDA NO	BULB TYPE	BULB DIA
USED	GRAHAM NO	CONTACT				
HEAD LAMPS	830-B	DOUBLE	32-32	2330	RP 11	1 11/16
PARK LAMPS	82190	SINGLE	1½	55	G 4½	9/32
BODY LAMP	3245	SINGLE	3	63	G 6	3/4
TAIL AND STOP LAMPS	70727	SINGLE	21-3	1158	S 8	1 1/16
GLOVE BOX & INST LAMPS	82414	SINGLE	1	51	G 3½	15/32

GRAHAM WIRING DIAGRAM, 1938, SERIES STANDARD AND SPECIAL
Courtesy of Graham-Paige Motors Corporation

Graham **Model 6-Cylinder** **Year 1938** **Series Standard and Special**

Battery Willard **Type** 15 Plate **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2330 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 51 and 55 **Dash, Tail and Stop** 1-3-21 C.P., 6-8 Volts
Mazda 1158 **Side Lights** 1½ C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 18 Amps. **Speed** 2900 R.P.M.
Regulation Voltage **Cut-in** 6.8 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018″
Spark Plug—Size 14 M.M. Champion **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing Model 96 T.D.C. Full Advanced

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35
Piston Ring—Width Oil 1—1³⁄₁₆″ Comp. 2—³⁄₃₂″
Diam. 3¼″ **Gap** .010″
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 47½° A.B.C.
Intake Clearance .010″
Exhaust Timing—Open 47½° B.B.C. **Close** 4½° A.T.C.
Exhaust Clearance .010″

Carburetor Marvel

Cooling System Centrifugal **Type** Pump **Capacity** 15 Qts.

Steering Camber 1° Caster 3° Toe In ⅛″

Clutch Long **Facings** Moulded 6″ x 9½″ x ⅛″ 2 Required

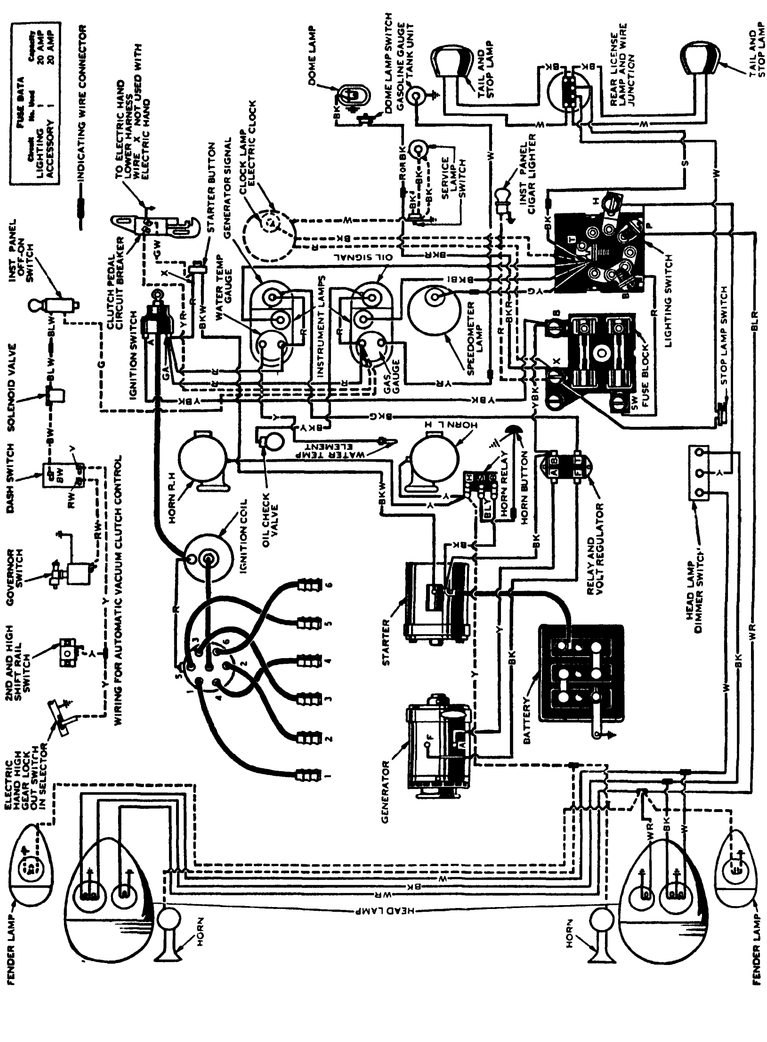
Gear Ratio Ring Gear 47 Pinion 11

Axle Semi-Floating Hypoid Gears

Brakes Lockheed Hydraulic
- **Front** 23″ x 1¾″ x ¼″ Clearance Heel .006″ Toe .010″
- **Rear** 23″ x 1¾″ x ¼″ Clearance Heel .006″ Toe .010″
- **Hand** 17¾″ x 2″ x ⁵⁄₃₂″ Trans. Clearance ¹⁄₃₂″

Lining Moulded

Diagram 38-11



HUDSON WIRING DIAGRAM, 1938, MODEL 6-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson **Model 6-Cylinder** **Year 1938 Series**

Battery National **Type** 17 Plate **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 55-1158 **Dash, Tail and Stop** 1½-3-21 C.P., 6-8 Volts
Mazda 55 **Side Lights** 1½ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 29 Amps. **Speed** 3200 R.P.M.
Regulation 3rd Brush, Voltage **Cut-in** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. Champion **Gap** .032″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 2—3/16″ Comp. 2—3/16″
Diam. 3″ **Gap** .009″ to .011″
Oiling—Type Plunger **Capacity** 6 Qts.

Valves **Intake Timing—Open** 10½° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 18¾° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter WDO

Cooling System Centrifugal **Type** Pump **Capacity** 12½ Qts.

Steering Caster 1° to 2° Camber 1° to 1½° Toe In 0″ to ⅛″

Clutch Wet Plate **Facings** Cork 6⅜″ x 9¾″ x .203″

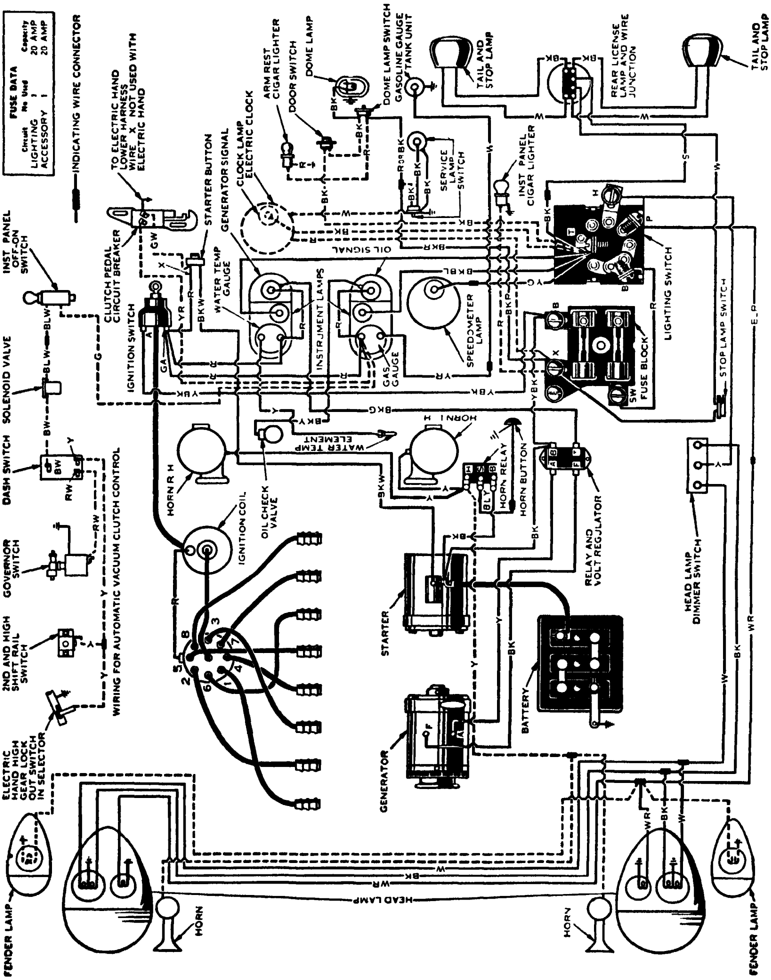
Gear Ratio Ring Gear 37 Pinion 9 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22⅛″ x 1¾″ x 7/32″ Clearance .010″
- **Rear** 22⅛″ x 1¾″ x 7/32″ Clearance .010″
- **Hand** Rear Service

Lining Moulded

Diagram 38–12



HUDSON WIRING DIAGRAM, 1938, MODEL 8-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson **Model 8-Cylinder** **Year 1938** **Series**

Battery National **Type** 19 Plate **Volts** 6 **Amps.** 125
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 55-1158 **Dash, Tail and Stop** 1½ C.P., 6-8 Volts
Mazda 55 **Side Lights** 1½ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 29 Amps. **Speed** 35 M.P.H.
Regulation 3rd Brush, Voltage **Cut-In** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .017″
Spark Plug—Size 14 M.M. Champion **Gap** .032″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 4½″ **Taxable H.P.** 28.8
Piston Ring—Width Oil 2—3/16″, Comp. 2—3/32″
Diam. 3″ **Gap** .009″—.011″
Oiling—Type Plunger **Capacity** 9 Qts.

Valves **Intake Timing—Open** 10½° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.T.C. **Close** 18¾° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter WDO

Cooling System Centrifugal **Type** Pump **Capacity** 17½ Qts.

Steering Caster 1° to 2°, Camber 1° to 1½° Toe In 0″ to ⅛″

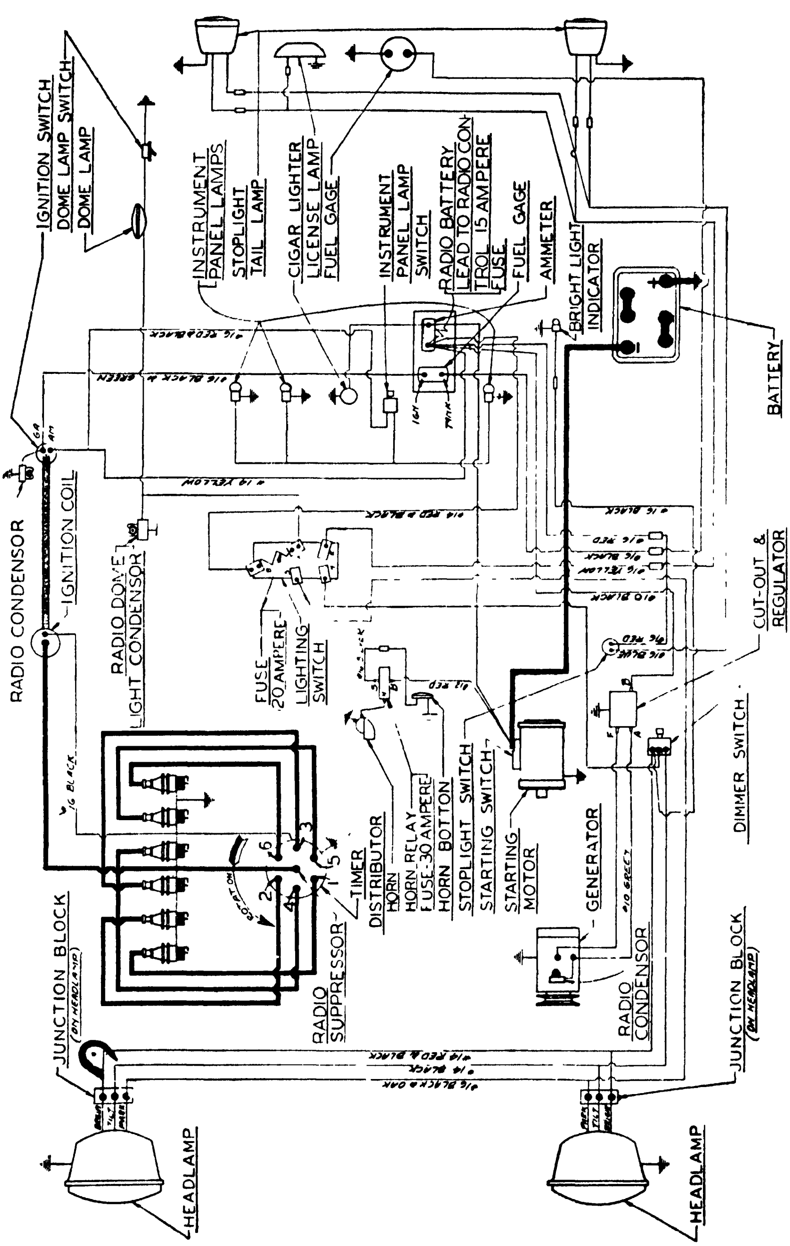
Clutch Wet Plate **Facings** Cork 6⅜″ x 9¾″ x .203″

Gear Ratio Ring Gear 37 Pinion 9 Spiral Gear

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 23 15/16″ x 1¾″ x 7/32″ Clearance .010″
Rear 23 15/16″ x 1¾″ x 7/32″ Clearance .010″
Hand Rear Service
Lining Moulded

Diagram 38-13



HUPMOBILE WIRING DIAGRAM, 1938, SERIES E-822

Courtesy of Hupp Motor Car Corporation

Hupmobile **Model 6-Cylinder** **Year 1938** **Series E-822**

Battery Willard **Type** 17 Plate **Volts** 6 **Amps** 120
Frame Connection Positive

Lighting Mazda 2320 **Head Lights** 21-32 C.P., 6-8 Volts, Dble. Con.
Mazda 1158 **Dash, Tail and Stop** 3-21 C.P., 6-8 Volts, Dble. Con.
Mazda 63 **Side Lights** 3 C.P., 6-8 Volts, Dble. Con.

Starter and Generator Auto-Lite

Generator **Max. Chg. Rate** 26.8 Amps. **Speed** 9.5 M.P.H.
Regulation 3rd Brush, Voltage **Cut-In** 6.6 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .022″

Auto-Lite **Spark Plug—Size** 18 M.M. Champion **Gap** .026″-.030″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3½″ **Stroke** 4¼″ **Taxable H.P.** 29.42
Piston Ring—Width Oil 2—5/32″ Comp, 2—⅛″
Diam. 3½″ **Gap**
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .010″
Exhaust Timing—Open **Close**
Exhaust Clearance .013″

Carburetor

Cooling System **Type** **Capacity** 18 Qts.

Steering Camber 1°, Caster 2° Toe In 1/16″

Clutch Borg & Beck **Facings** 2 Moulded and Woven 6⅛″ x 9⅞″ x ⅛″

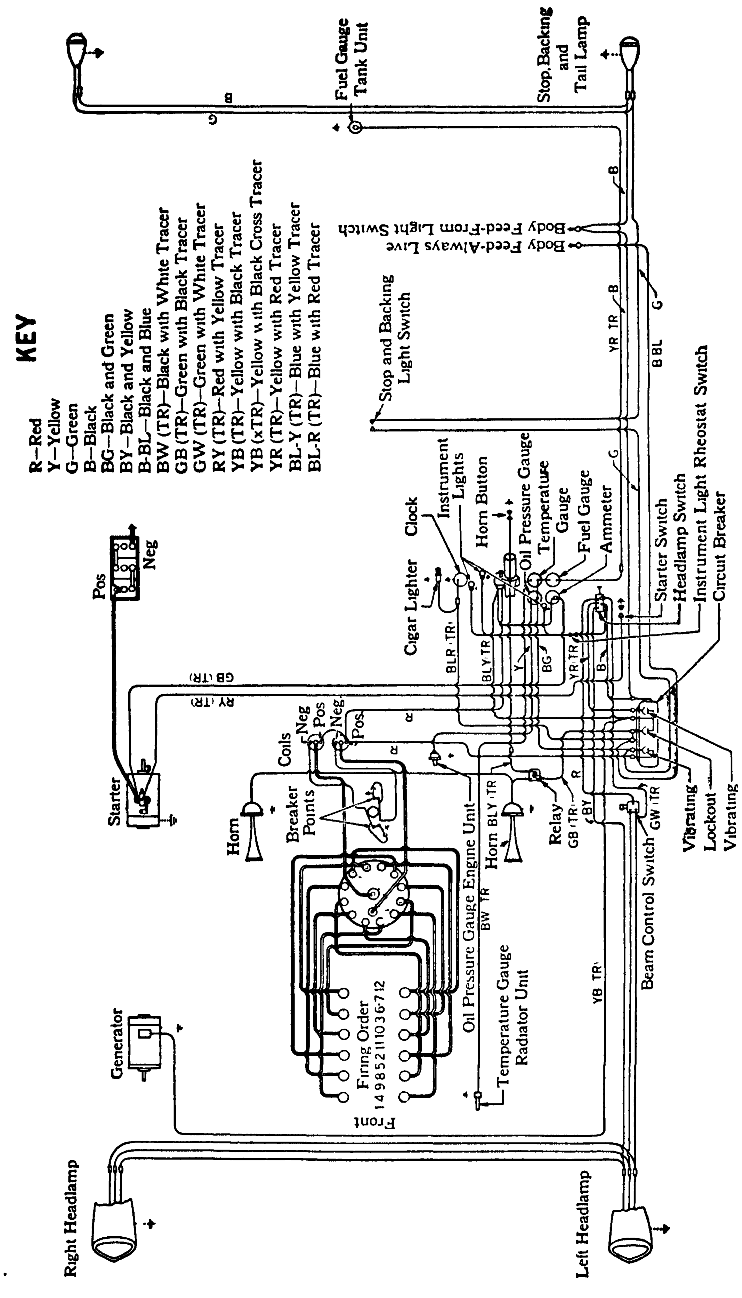
Gear Ratio Ring Gear 50 Pinion 11

Axle Semi-Floating Hypoid Gears

Brakes Lockheed Hydraulic
- **Front** 20¾″ x 2″ x 3/16″
- **Rear** 20¾″ x 2″ x 3/16″
- **Hand** Rear Service

Lining Moulded

Diagram 38-14



LINCOLN WIRING DIAGRAM, 1938, MODEL V-12-CYLINDER
Courtesy of Ford Motor Company

Lincoln **Model V-12-Cylinder** **Year 1938** **Series**

Battery Exide **Type** **Volts** 6 **Amps.** 147
Frame Connection Negative

Lighting **Head Lights** 32 C.P., 6-8 Volts
Dash, Tail and Stop
Side Lights 1½ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 18 Amps. **Speed** 20 M.P.H.
Regulation 3rd Brush, Voltage **Cut-In**
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 18 M.M. Champion **Gap** .030″
Firing Order 1-4-9-8-5-2-11-10-3-6-7-12
Timing T.D.C. Retard

Engine **Bore** 3⅛″ **Stroke** 4½″ **Taxable H.P.** 46.8
Piston Ring—Width Oil 2—5/32″, Comp. 2—⅛″
Diam. 3⅛″ **Gap** Oil .007″, Comp .008″
Oiling Type Pump **Capacity** 12 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance Zero
Exhaust Timing—Open **Close**
Exhaust Clearance Zero

Carburetor Stromberg EE

Cooling System Centrifugal **Type** Pump **Capacity** 8 Gals.

Steering Camber 1°, Caster 1½°, Toe In 1/16″

Clutch Long **Facings** Woven 7″ x 12″ x .137″ 2 Required

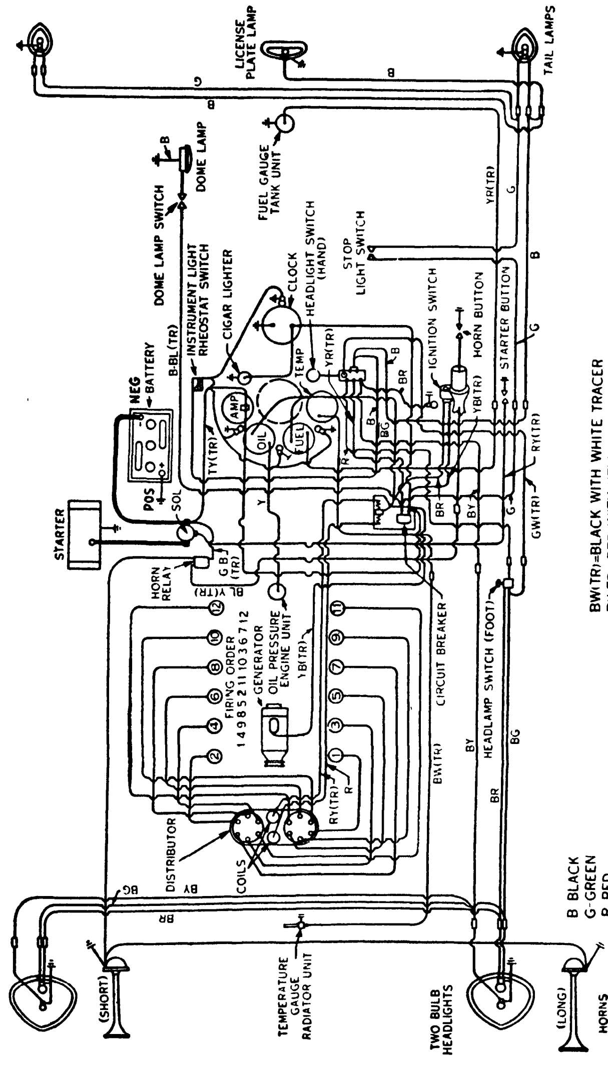
Gear Ratio Ring Gear 55 Pinion 12

Axle Full-Floating Spiral Gears

Brakes Bendix Mechanical
- **Front** 33½″ x 2½″ x ¼″ Clearance .010″
- **Rear** 33½″ x 2½″ x ¼″ Clearance .010″
- **Hand** 4 Wheels

Lining Moulded

Diagram 38-15



B BLACK
G-GREEN
R RED
Y-YELLOW
BG=BLACK AND GREEN
BR=BLACK AND RED
BY-BLACK AND YELLOW
G B(TR)=GREEN WITH BLACK TRACER
GW(TR)=GREEN WITH WHITE TRACER
BW(TR)=BLACK WITH WHITE TRACER
RY(TR)-RED WITH YELLOW TRACER
BL Y(TR)=BLUE WITH YELLOW TRACER
BL-R(TR)=BLUE WITH RED TRACER
YB(TR)=YELLOW WITH BLACK TRACER
B-BL=BLACK AND BLUE
YR(TR)=YELLOW WITH RED TRACER
TR(TR)-TAN WITH YELLOW TRACER

LINCOLN-ZEPHYR WIRING DIAGRAM, 1938, MODEL 12-CYLINDER
Courtesy of Ford Motor Company

Lincoln-Zephyr **Model 12-Cylinder** **Year 1938 Series**

Battery Own **Type** **Volts** 6 **Amps.** 100
Frame Connection Positive

Lighting **Head Lights** 6-8 Volts
Dash, Tail and Stop 6-8 Volts
Side Lights 6-8 Volts

Starter and Generator Own

Generator Hot **Max. Chg. Rate** 26 Amps. **Speed** 30 M.P.H.
Regulation Voltage and Current **Cut-In** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″-.016″
Spark Plug—Size 18 M.M. Champion **Gap** .028″-.030″
Firing Order 1L-2R-5L-4R-3L-1R-6L-5R-2L-3R-4L-6R
Timing

Engine **Bore** 2¾″ **Stroke** 3¾″ **Taxable H.P.** 36.39
Piston Ring—Width Oil 1—5/32″; Comp. 2—3/32″
Diam. 2¾″ **Gap** .008″
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 19½° B.T.C. **Close** 54½° A.B.C.
Intake Clearance .000″
Exhaust Timing—Open 57½° B.B.C. **Close** 16½° A.T.C.
Exhaust Clearance .000″

Carburetor Chandler Groves

Cooling System Centrifugal **Type** Pump **Capacity** 30 Qts.

Steering Camber ¾°, Caster 4°, Toe In 1/16″

Clutch Long **Facings** Woven 6″ x 10″ x .137″ 2 Required

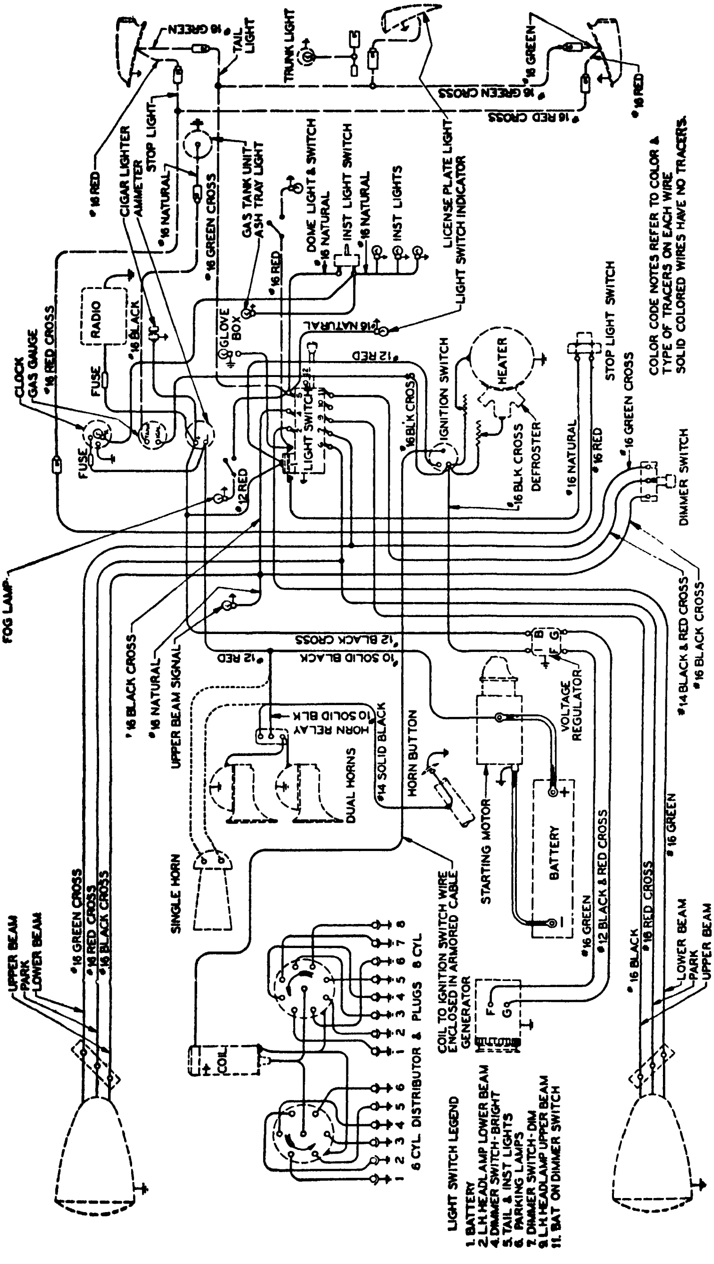
Gear Ratio Ring Gear 39 Pinion 9

Axle ¾″ Floating Hypoid Gears

Brakes Bendix Mechanical
- **Front** 23⅞″ x 1¾″ x 7/32″ Clearance .010″
- **Rear** 23⅞″ x 1¾″ x 7/32″ Clearance .010″
- **Hand** 4 Wheels

Lining Moulded

Diagram 38-16



OLDSMOBILE WIRING DIAGRAM, 1938, SERIES F AND L-37

Courtesy of Olds Motor Works

Oldsmobile Model 6- and 8-Cylinders Year 1938 Series F and L-37

Battery Delco **Type** 6 Cyl. 15E1-W, 8-17 E1-W **Volts** 6 **Amps.** 6-94, 8-110
Frame Connection Negative

Lighting 2320L **Head Lights** 21-32 C.P., 6-8 Volts
1154 **Dash, Tail and Stop** 21-3 C.P., 6-8 Volts
55 **Side Lights** $1\frac{1}{2}$ C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Cold **Max. Chg. Rate** 26-30 Amps. **Speed** 30-35 M.P.H.
Regulation 3rd Brush, Voltage **Cut-In** 6.5-7.0 Volts
Relay Air Gap .016″-.020″ **Contact Gap** .016″-.022″

Ignition Delco **Contact Breaker Gap** F-38-.020″ L-38-.015″
Spark Plug—Size 14 M.M. AC **Gap** F-38-.040″
L-38-.030″
Firing Order 6, 1-5-3-6-2-4; 8, 1-6-2-5-8-3-7-4
Timing T.D.C. on F, 2° B.T.C. on L

Engine **Bore** F-$3\frac{7}{16}$″, L-$3\frac{1}{4}$″ **Stroke** F-$4\frac{1}{8}$″, L-$3\frac{7}{8}$″ **Tax. H.P.** F-28.4, L-33.8
Piston Ring—Width F Oil 2—$\frac{3}{16}$″, L $2\frac{3}{16}$″; Comp. F 2—$\frac{1}{8}$″, L 2—$\frac{3}{32}$″
Diam. F $3\frac{7}{16}$″, L-$3\frac{1}{4}$″ **Gap** F and L, .009-.014 on Oil and Comp.
Oiling—Type Pump **Capacity** F-6 Qts., L-7 Qts.

Valves **Intake Tim.-Op.** F 5° B.T.C., L T.D.C. **Close** F 45° A.B.C., L 35° A.B.C.
Intake Clearance .008″ Warm on Both Models
Exhaust Tim.—Op. 45° B.B.C. on Both **Close** F 5° A.T.C., L 10° A.T.C.
Exhaust Clearance .011″ Warm on Both Models

Carburetor Carter 385-S

Cooling System Centrifugal **Type** Pump **Capacity** F 17 Qts., L 21 Qts.

Steering Camber $\frac{1}{32}$″, Caster $\frac{5}{64}$″, Toe In $\frac{1}{8}$″

Clutch Plate **Facings** F $5\frac{5}{8}$″x$9\frac{1}{4}$″x$\frac{1}{8}$″, L 6″x10″x$\frac{1}{8}$″ 2 Required

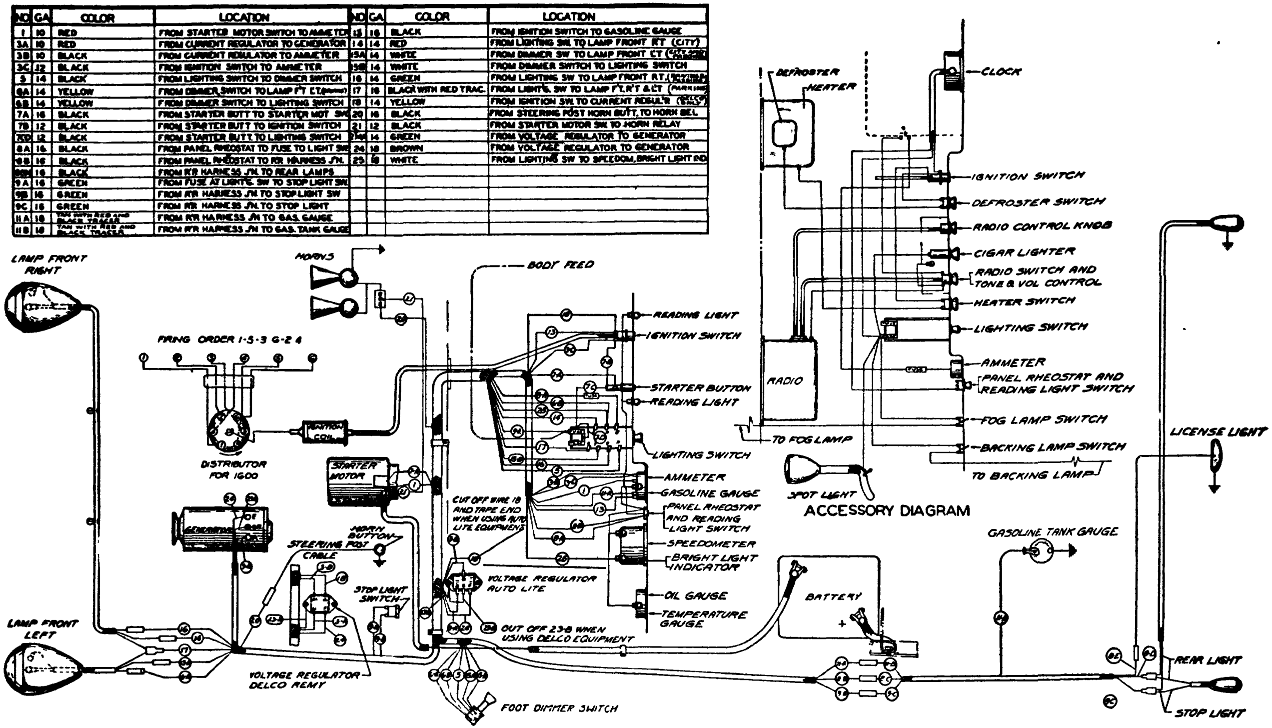
Gear Ratio Ring Gear 35 Pinion 8, on Both Models

Axle Semi-Floating Hypoid Gears

Brakes Bendix Hydraulic
- **Front** Primary F $9\frac{11}{32}$″x$1\frac{3}{4}$″x$\frac{3}{16}$″, L $10\frac{3}{32}$″x$1\frac{3}{4}$″x$\frac{3}{16}$″ Cl. .010″
- **Rear** Secondary F $11\frac{31}{32}$″x$1\frac{3}{4}$″x$\frac{3}{16}$″, L $12\frac{61}{64}$″x$1\frac{3}{4}$″x$\frac{3}{16}$″
- **Hand** Rear Service

Lining Primary Moulded, Secondary Woven and Compressed

Diagram 38-17



NO	GA	COLOR	LOCATION	NO	GA	COLOR	LOCATION
1	10	RED	FROM STARTER MOTOR SWITCH TO AMMETER	13	16	BLACK	FROM IGNITION SWITCH TO GASOLINE GAUGE
3A	10	RED	FROM CURRENT REGULATOR TO GENERATOR	14	14	RED	FROM LIGHTING SW. TO LAMP FRONT RT (CITY)
3B	10	BLACK	FROM CURRENT REGULATOR TO AMMETER	15A	14	WHITE	FROM DIMMER SW TO LAMP FRONT LT (CITY AND PASSING)
3C	12	BLACK	FROM IGNITION SWITCH TO AMMETER	15B	14	WHITE	FROM DIMMER SWITCH TO LIGHTING SWITCH
5	14	BLACK	FROM LIGHTING SWITCH TO DIMMER SWITCH	16	14	GREEN	FROM LIGHTING SW TO LAMP FRONT RT. (DRIVING & PASSING)
6A	14	YELLOW	FROM DIMMER SWITCH TO LAMP F'T LT.(DRIVING)	17	16	BLACK WITH RED TRAC.	FROM LIGHT'G. SW TO LAMP F'T, R'T & LT (PARKING)
6B	14	YELLOW	FROM DIMMER SWITCH TO LIGHTING SWITCH	18	14	YELLOW	FROM IGNITION SW. TO CURRENT REGUL'R (DELCO ONLY)
7A	16	BLACK	FROM STARTER BUTT TO STARTER MOT SW	20	16	BLACK	FROM STEERING POST HORN BUTT, TO HORN REL.
7B	12	BLACK	FROM STARTER BUTT TO IGNITION SWITCH	21	12	BLACK	FROM STARTER MOTOR SW. TO HORN RELAY
7D	12	BLACK	FROM STARTER BUTT. TO LIGHTING SWITCH	23A	14	GREEN	FROM VOLTAGE REGULATOR TO GENERATOR
8A	16	BLACK	FROM PANEL RHEOSTAT TO FUSE TO LIGHT SW	24	18	BROWN	FROM VOLTAGE REGULATOR TO GENERATOR
8B	16	BLACK	FROM PANEL RHEOSTAT TO R'R HARNESS J'N.	25	18	WHITE	FROM LIGHTING SW TO SPEEDOM, BRIGHT LIGHT IND
[illegible]	16	BLACK	FROM R'R HARNESS J'N. TO REAR LAMPS				
9A	16	GREEN	FROM FUSE AT LIGHT'G. SW TO STOP LIGHT SW				
9B	16	GREEN	FROM R'R HARNESS J'N TO STOP LIGHT SW				
9C	16	GREEN	FROM R'R HARNESS J'N. TO STOP LIGHT				
11A	18	TAN WITH RED AND BLACK TRACER	FROM R'R HARNESS J'N TO GAS. GAUGE				
11B	18	TAN WITH RED AND BLACK TRACER	FROM R'R HARNESS J'N TO GAS. TANK GAUGE				

PACKARD WIRING DIAGRAM, 1938, MODEL 6-CYLINDER

Courtesy of Packard Motor Car Company

Packard **Model** **6-Cylinder** **Year** **1938** **Series**

Battery Willard **Type** **Volts** 6 **Amps.** **95**

Frame Connection Positive

Lighting

- **Head Lights** 6-8 Volts
- **Dash, Tail and Stop** 6-8 Volts
- **Side Lights** 6-8 Volts

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** **26.5** **Speed** **3400** R.P.M.

Regulation Voltage **Cut-In** 6.5

Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** **.020″**

Spark Plug—Size 10 M.M. AC **Gap** **.028″**

Firing Order 1-5-3-6-2-4

Timing 4½°-6° B.T.C.

Engine **Bore** 3½″ **Stroke** 4¼″ **Taxable H.P.** 29.4

Piston Ring—Width Oil 1—3/16″; Comp. 2—⅛″

Diam. 3½″ **Gap** .007″

Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 39° A.B.C.

Intake Clearance .007″ Warm

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .010″ Warm

Carburetor Chandler Groves

Cooling System Centrifugal **Type** Pump **Capacity** 15 Qts.

Steering Camber ½°, Caster 1½°, Toe In 1/32″

Clutch Long **Facings** Woven 6″ x 9½″ x ⅛″ 2 Required

Gear Ratio 4.54-1

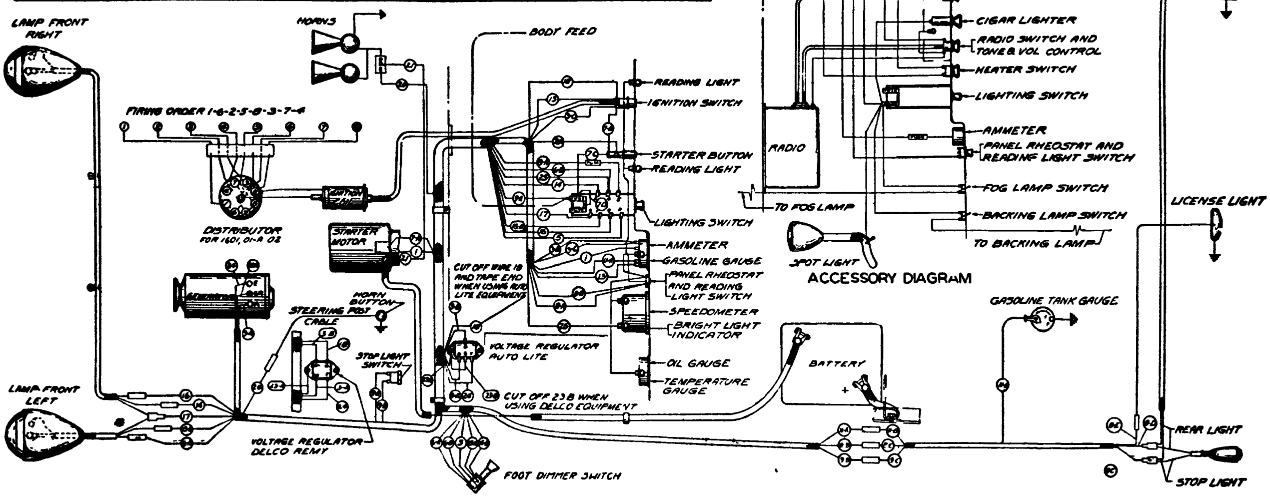
Axle Semi-Floating Hypoid Gears

Brakes Bendix Hydraulic
- **Front** 24″ x 1¾″ x 3/16″
- **Rear** 24″ x 1¾″ x 3/16″
- **Hand** Rear Service

Lining

Diagram 38-18

NO	GA	COLOR	LOCATION	NO	GA	COLOR	LOCATION
1	10	RED	FROM STARTER MOTOR SWITCH TO AMMETER	13	16	BLACK	FROM IGNITION SWITCH TO GASOLINE GAUGE
3A	10	RED	FROM CURRENT REGULATOR TO GENERATOR	14	14	RED	FROM LIGHTING SW. TO LAMP FRONT RT. (CITY)
3B	10	BLACK	FROM CURRENT REGULATOR TO AMMETER	15A	14	WHITE	FROM DIMMER SW TO LAMP FRONT L'T (CITY AND PASSING)
3C	12	BLACK	FROM IGNITION SWITCH TO AMMETER	15B	14	WHITE	FROM DIMMER SWITCH TO LIGHTING SWITCH
5	14	BLACK	FROM LIGHTING SWITCH TO DIMMER SWITCH	16	14	GREEN	FROM LIGHTING SW TO LAMP FRONT RT (DRIVING & PASSING)
6A	14	YELLOW	FROM DIMMER SWITCH TO LAMP F'T L'T (DRIVING)	17	16	BLACK WITH RED TRAC.	FROM LIGHT'G. SW TO LAMP F'T R'T & L'T (PARKING)
6B	14	YELLOW	FROM DIMMER SWITCH TO LIGHTING SWITCH	18	14	YELLOW	FROM IGNITION SW. TO CURRENT REGUL'R (DELCO ONLY)
7A	16	BLACK	FROM STARTER BUTT TO STARTER MOT SW	20	16	BLACK	FROM STEERING POST HORN BUTT TO HORN REL
7B	12	BLACK	FROM STARTER BUTT TO IGNITION SWITCH	21	12	BLACK	FROM STARTER MOTOR SW. TO HORN RELAY
7C	12	BLACK	FROM STARTER BUTT. TO LIGHTING SWITCH	23A	14	GREEN	FROM VOLTAGE REGULATOR TO GENERATOR
8A	16	BLACK	FROM PANEL RHEOSTAT TO FUSE TO LIGHT SW	24	18	BROWN	FROM VOLTAGE REGULATOR TO GENERATOR
8B	16	BLACK	FROM PANEL RHEOSTAT TO R'R HARNESS J'N.	25	18	WHITE	FROM LIGHTING SW TO SPEEDOM BRIGHT LIGHT IND
8C	16	BLACK	FROM R'R HARNESS J'N. TO REAR LAMPS				
9A	16	GREEN	FROM FUSE AT LIGHT'G. SW. TO STOP LIGHT SW				
9B	16	GREEN	FROM R'R HARNESS J'N TO STOP LIGHT SW				
9C	16	GREEN	FROM R'R HARNESS J'N. TO STOP LIGHT				
11A	18	TAN WITH RED AND BLACK TRACER	FROM R'R HARNESS J'N. TO GAS. GAUGE				
11B	18	TAN WITH RED AND BLACK TRACER	FROM R'R HARNESS J'N. TO GAS TANK GAUGE				



PACKARD WIRING DIAGRAM, 1938, MODEL 8-CYLINDER

Courtesy of Packard Motor Car Company

Packard **Model 8-Cylinder** **Year 1938** **Series**

Battery Delco-Remy **Type** **Volts** 6 **Amps.** 114
Frame Connection Positive

Lighting **Head Lights** 6-8 Volts
Dash, Tail and Stop 6-8 Volts
Side Lights 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 25.5 Amps. **Speed** 2500 R. P. M.
Regulation Voltage **Cut-In** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .015″
Spark Plug—Size 10 M.M. AC **Gap** .028″
Firing Order 1-6-2-5-8-3-7-4
Timing 6°-8° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4¼″ **Taxable H.P.** 33.8
Piston Ring—Width Oil 1—3/16″; Comp. 2—⅛″
Diam. 3¼″ **Gap** .007″
Oiling—Type Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 39° A.B.C.
Intake Clearance .007″ Warm
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .010″ Warm

Carburetor Stromberg

Cooling System Centrifugal **Type** Pump **Capacity** 16 Qts.

Steering Camber ½°, Caster 1½°, Toe In 1/32″

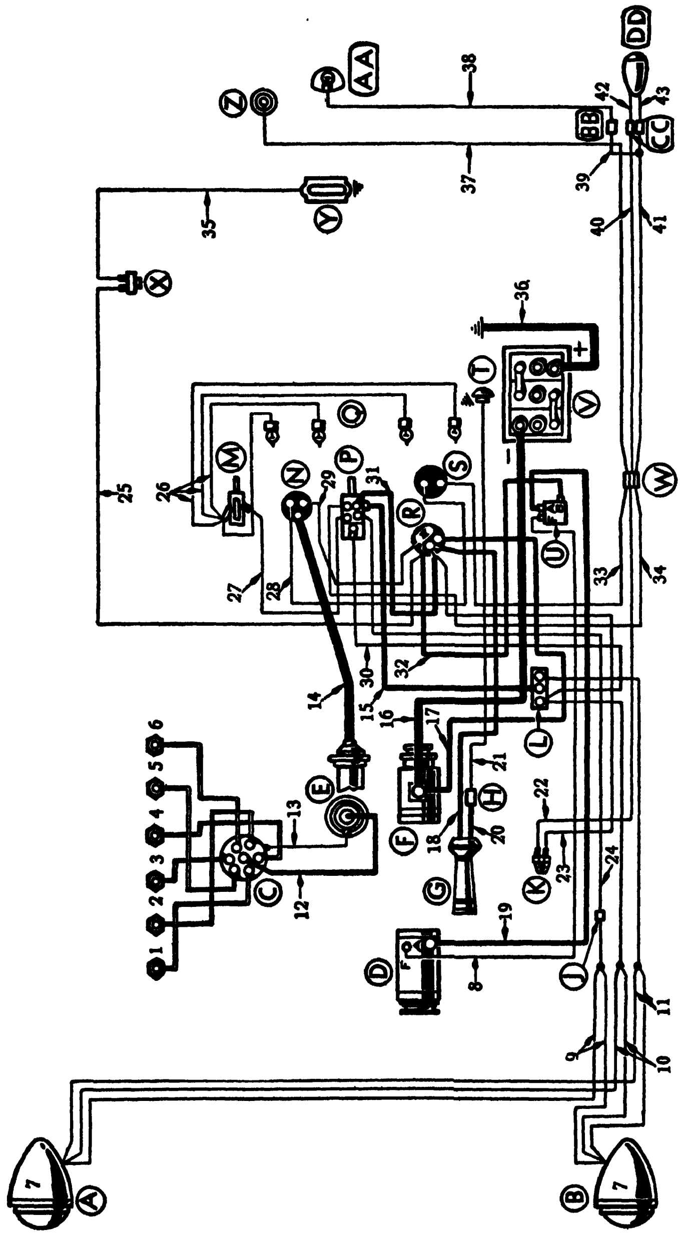
Clutch Long **Facings** Woven 6″ x 10″ x .137″ 2 Required

Gear Ratio 4.36-1

Axle Semi-Floating Hypoid Gears

Brakes Bendix Hydraulic
Front 26″ x 1¾″ x 3/16″
Rear 26″ x 1¾″ x 3/16″
Hand Rear Service
Lining

Diagram 38-19



PLYMOUTH WIRING DIAGRAM, 1938, MODEL 6-CYLINDER

Courtesy of Chrysler Corporation

Plymouth Model 6-Cylinder Year 1938 Series

Battery Willard **Type** **Volts** 6 **Amps.** 90
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 55-1158 **Dash, Tail and Stop** $1\frac{1}{2}$-3-21 C.P., 6-8 Volts
Mazda 55 **Side Lights** $1\frac{1}{2}$ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 26-29 Amps. **Speed** 30 M.P.H.
Regulation 3rd Brush, Voltage **Cut-In** 7.1-7.7 Volts
Relay Air Gap **Contact Gap** .015"-.025"

Ignition **Contact Breaker Gap** .020"
Spark Plug—Size 14 M.M. **Gap** .025"
Firing Order 1-5-3-6-2-4
Timing 4° A.T.C.

Engine **Bore** $3\frac{1}{8}$" **Stroke** $4\frac{3}{8}$" **Taxable H.P.** 23.44
Piston Ring—Width Oil 2—$\frac{5}{32}$"; Comp. 2—$\frac{1}{8}$"
Diam. $3\frac{1}{8}$" **Gap** .007"-.015"
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .006" Hot
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .008" Hot

Carburetor Carter

Cooling System Centrifugal **Type** Pump **Capacity** $3\frac{1}{2}$ Gallons

Steering Caster 3°-5°, Camber $\frac{1}{4}$°-$\frac{3}{4}$°, Toe In $\frac{1}{16}$"

Clutch Borg & Beck **Facings** Woven $5\frac{5}{8}$" x $9\frac{1}{4}$" x .133" 2 Required

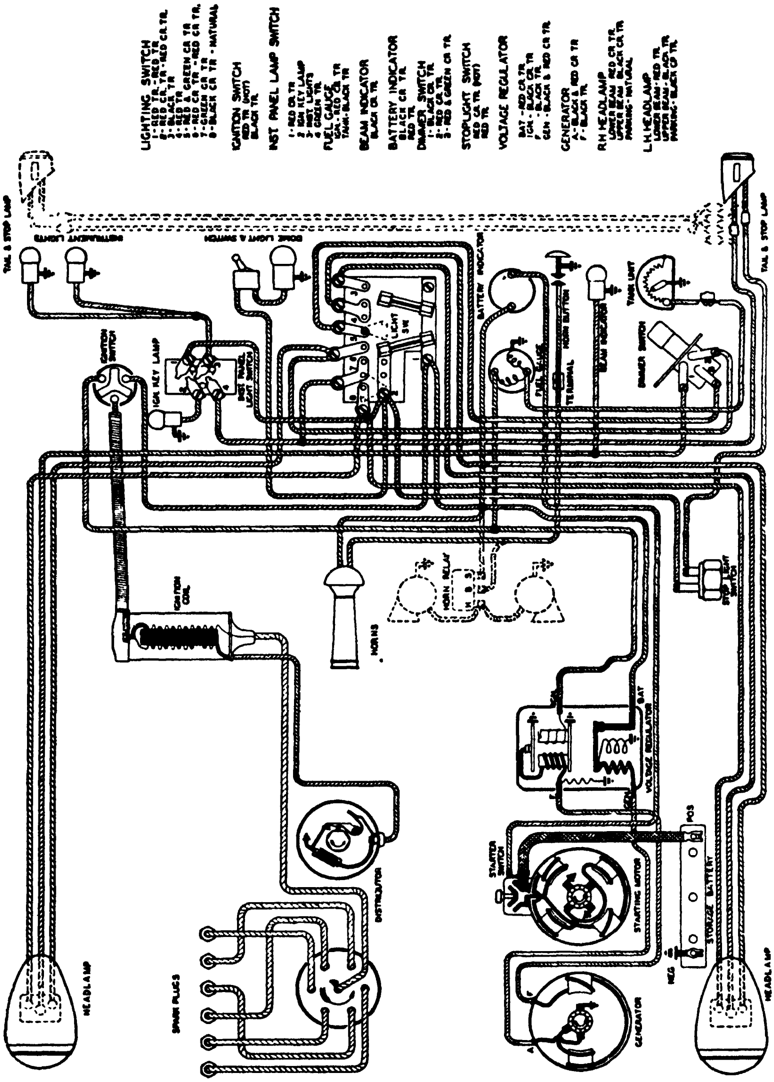
Gear Ratio Ring Gear 39 Pinion 10 Hypoid Gears

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** $17\frac{19}{64}$" x 2" x $\frac{13}{64}$" Clearance Heel .006"; Toe .012"
- **Rear** $17\frac{19}{64}$" x 2" x $\frac{13}{64}$" Clearance Heel .006"; Toe .012"
- **Hand** $17\frac{1}{16}$" x 2" x $\frac{5}{32}$" Transmission Clearance .025"

Lining Moulded

Diagram 38-20



PONTIAC WIRING DIAGRAM, 1938, MODEL 6-CYLINDER
Courtesy of Pontiac Motor Company

Pontiac **Model 6-Cylinder** **Year 1938 Series**

Battery Delco **Type** 15-E-1W **Volts** 6 **Amps.** 98
Frame Connection Negative

Lighting 2320L **Head Lights** 6-8 Volts
87 and 55 **Dash, Tail and Stop** 6-8 Volts
55 **Side Lights** 6-8 Volts

Starter and Generator Delco-Remy

Generator Cold **Max. Chg. Rate** 26.4-30.4 Amps. **Speed** 3250 R.P.M.
Regulation 3rd Brush, Voltage **Cut-In** 6.5 Volts
Relay Air Gap .18″-.025″ **Contact Gap** .18″-.025″

Ignition **Contact Breaker Gap** .020″

Delco-Remy **Spark Plug—Size** 14 M.M. AC **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 4° B.T.C. Retard

Engine **Bore** 3 7/16″ **Stroke** 4″ **Taxable H.P.** 28.3
Piston Ring—Width Oil, 1—3/16″; Comp. 2—1/8″
Diam. 3 7/16″ **Gap** .007″-.017″
Oiling—Type Pressure **Capacity** 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .011″-.013″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° B.T.C.
Exhaust Clearance .011″-.013″ Hot

Carburetor Carter W1 1 1/4″

Cooling System Centrifugal **Type** Pump **Capacity** 16 Qts.

Steering Caster 3/4°, Camber 3/4°, Toe In 0″

Clutch Plate **Facings** 2 Moulded 10″ x 6″ x 1/8″

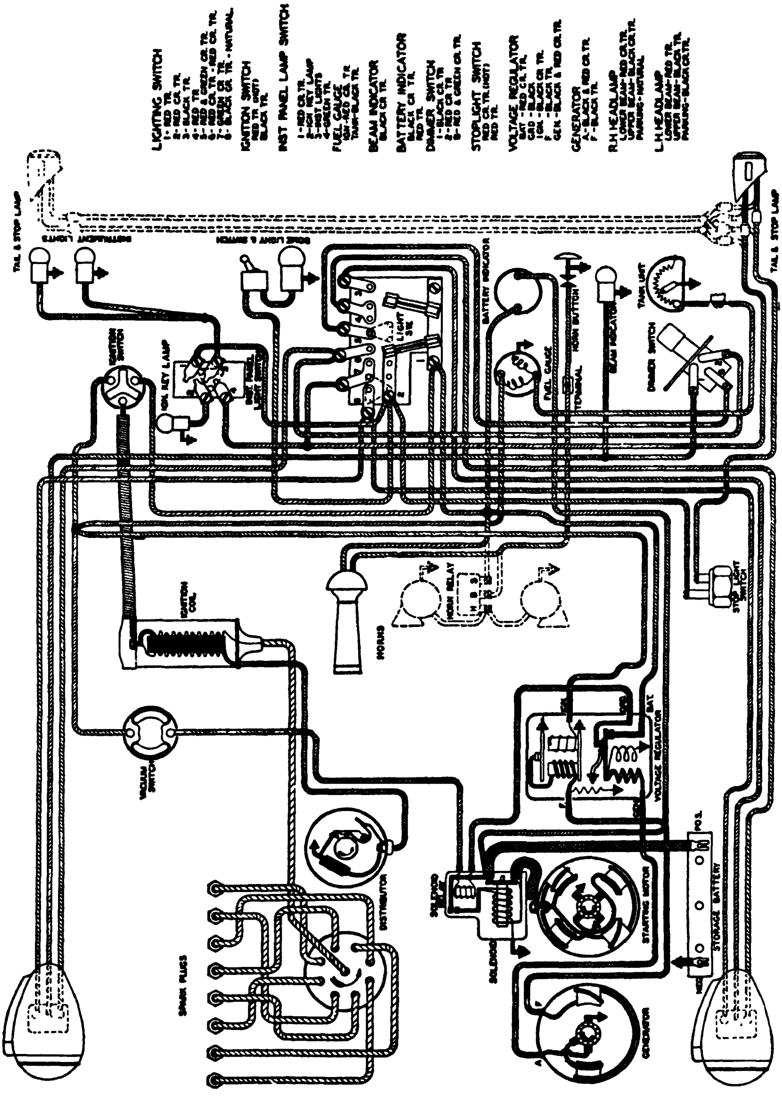
Gear Ratio Ring Gear 35 Pinion 8

Axle Semi-Floating Spiral Gears

Brakes Bendix Hydraulic
- **Front** 23 1/16″ x 1 3/4″ x 3/16″ Clearance .010″
- **Rear** 23 1/16″ x 1 3/4″ x 3/16″ Clearance .010″
- **Hand** As Above Rear Service

Lining Moulded

Diagram 38-21



PONTIAC WIRING DIAGRAM, 1938, MODEL 8-CYLINDER
Courtesy of Pontiac Motor Company

Pontiac **Model 8-Cylinder** **Year 1938** **Series**

Battery Delco **Type** 17-E-1W **Volts** 6 **Amps.** 112
Frame Connection Negative

Lighting 2320L **Head Lights** 6-8 Volts
87L and 55 **Dash, Tail and Stop** 6-8 Volts
55 **Side Lights** 6-8 Volts

Starter and Generator Delco-Remy

Generator Cold **Max. Chg. Rate** 26.4-30.4 Amps. **Speed** 3250 R.P.M.
Regulation 3rd Brush, Voltage **Cut-In** 6.5 Volts
Relay Air Gap .18″ to .025″ **Contact Gap** .18″-.025″

Ignition **Contact Breaker Gap** .015″

Delco-Remy **Spark Plug—Size** 14 M.M. AC **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 4° B.T.C. Retard

Engine **Bore** 3¼″ **Stroke** 3¾″ **Taxable H.P.** 33.8
Piston Ring—Width Oil, 1—3/16″; Comp. 2—⅛″
Diam. 3¼″ **Gap** .007″-.017″
Oiling—Type Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .011″-.013″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .011″-.013″ Hot

Carburetor Carter W1-1 5/16

Cooling System Centrifugal **Type** Pump **Capacity** 19 Qts.

Steering Caster ¾°, Camber ¾°, Toe In 0″

Clutch Plate **Facings** 2 Moulded 10″ x 6″ x ⅛″

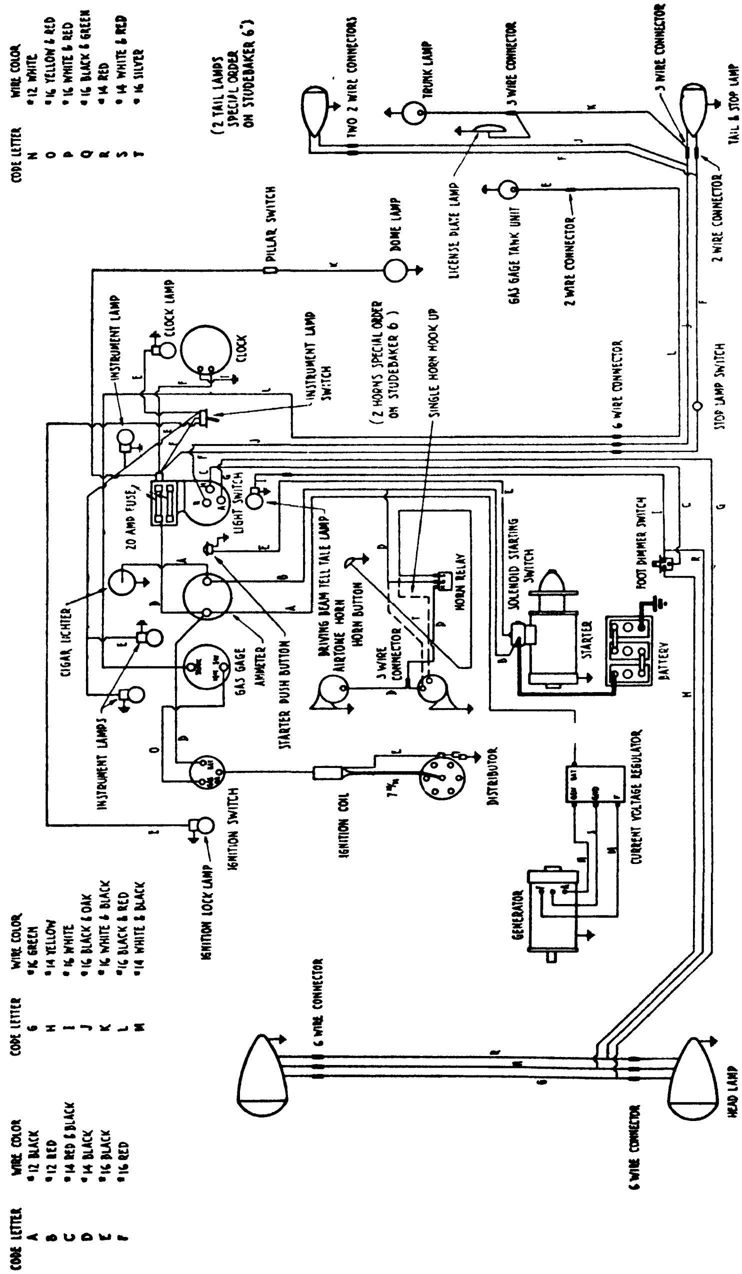
Gear Ratio Ring Gear 35 Pinion 8 Spiral Gears

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 23 1/16″ x 1¾″ x 3/16″ Clearance .010″
- **Rear** 23 1/16″ x 1¾″ x 3/16″ Clearance .010″
- **Hand** As Above Rear Service

Lining Moulded

Diagram 38-22



STUDEBAKER WIRING DIAGRAM, 1938, MODEL COMMANDER

Courtesy of Studebaker Corporation

Studebaker Model Commander **Year 1938 Series**

Battery Willard **Type** WHT-2-105 **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 55-1158 **Dash, Tail and Stop** 1½-2-21 C.P., 6-8 Volts
Mazda 55 **Side Lights** 1½ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 22 Amps. **Speed** 2500 R.P.M.
Regulation 3rd Brush, Voltage **Cut-In** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 M.M. Champion **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 9/64″ B.T.C.

Engine **Bore** 3 5/16″ **Stroke** 4 3/8″ **Taxable H.P.** 26.35
Piston Ring—Width Oil 1—3/16″; Comp. 2—1/8″
Diam. 3 5/16″ **Gap** Oil .013″-.018″; Comp. .013″-.018″
Oiling—Type Pump **Capacity** 5½ Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.
Intake Clearance .016″ Cold
Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .016″ Cold

Carburetor Stromberg BXO26

Cooling System Centrifugal **Type** Pump **Capacity** 14 Qts.

Steering Caster ¼°-¾°, Camber ¼°-¾°, Toe In 1/16″-1/8′

Clutch Borg & Beck **Facings** Composition 5⅝″ x 9¼″ x .137″ 2 Required

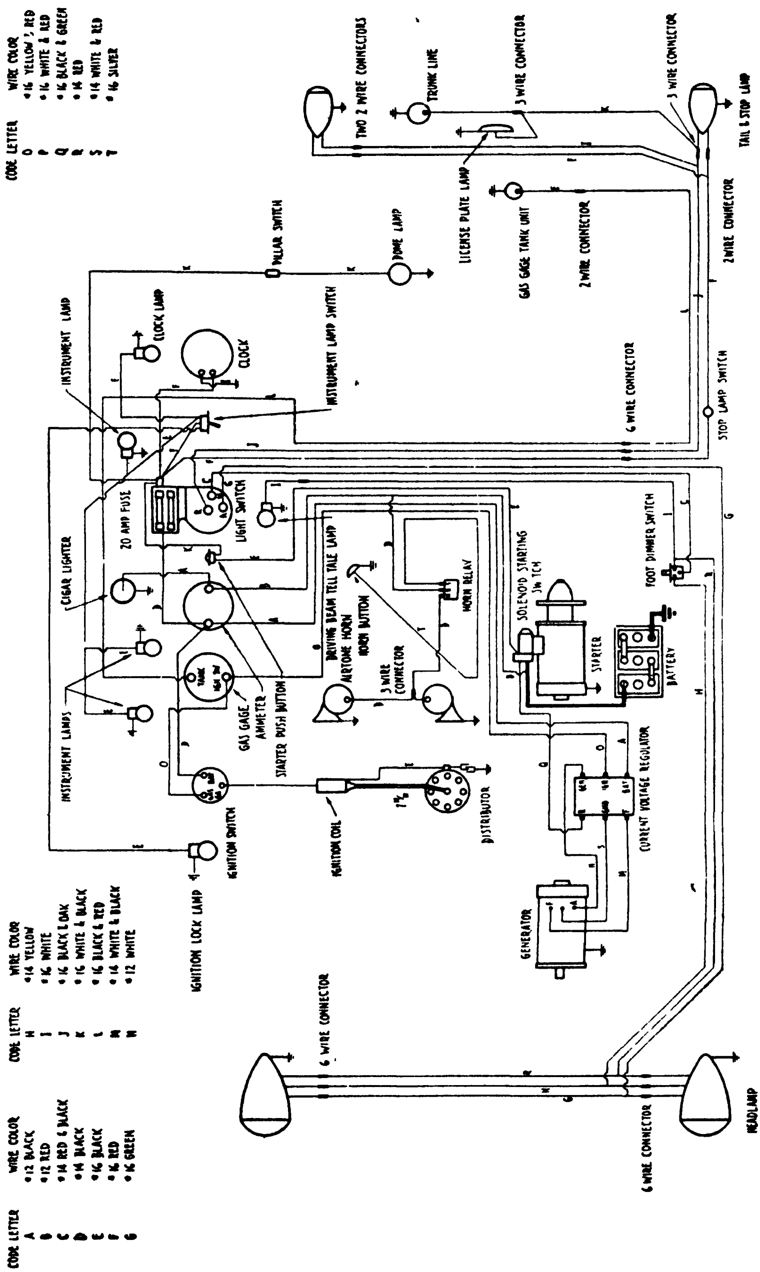
Gear Ratio 4.55-1 Hypoid Gears

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front 19 11/16″ x 2″ x 3/16″ Clearance Anchor .005″ Piston .010″
Rear 19 11/16″ x 2″ x 3/16″ Clearance Anchor .005″ Piston .010″
Hand Rear Service

Lining Moulded

Diagram 38-23



STUDEBAKER WIRING DIAGRAM, 1938, MODEL PRESIDENT
Courtesy of Studebaker Corporation

Studebaker Model President **Year 1938 Series**

Battery Willard **Type** WHT-2-105 **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 55-1158 **Dash, Tail and Stop** 1½-2-21 C.P., 6-8 Volts
Mazda 55 **Side Lights** 1½ C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 26 Amps. **Speed** 1750 R.P.M.
Regulation 3rd Brush, Voltage **Cut-In** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 18 M.M. Champion **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3⅑₁₆″ **Stroke** 4¼″ **Taxable H.P.** 30
Piston Ring—Width Oil 1—³⁄₁₆″; Comp. 2—⅛″
Diam. 3¹⁄₁₆″ **Gap** Oil .013″-.018″; Comp. .013″-.018″
Oiling—Type Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.
Intake Clearance .016″ Cold
Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .016″ Cold

Carburetor Stromberg AA016

Cooling System Centrifugal **Type** Pump **Capacity** 17 Qts.

Steering Caster ¼°-¾°, Camber ¼°-¾°, Toe In ¹⁄₁₆″-⅛″

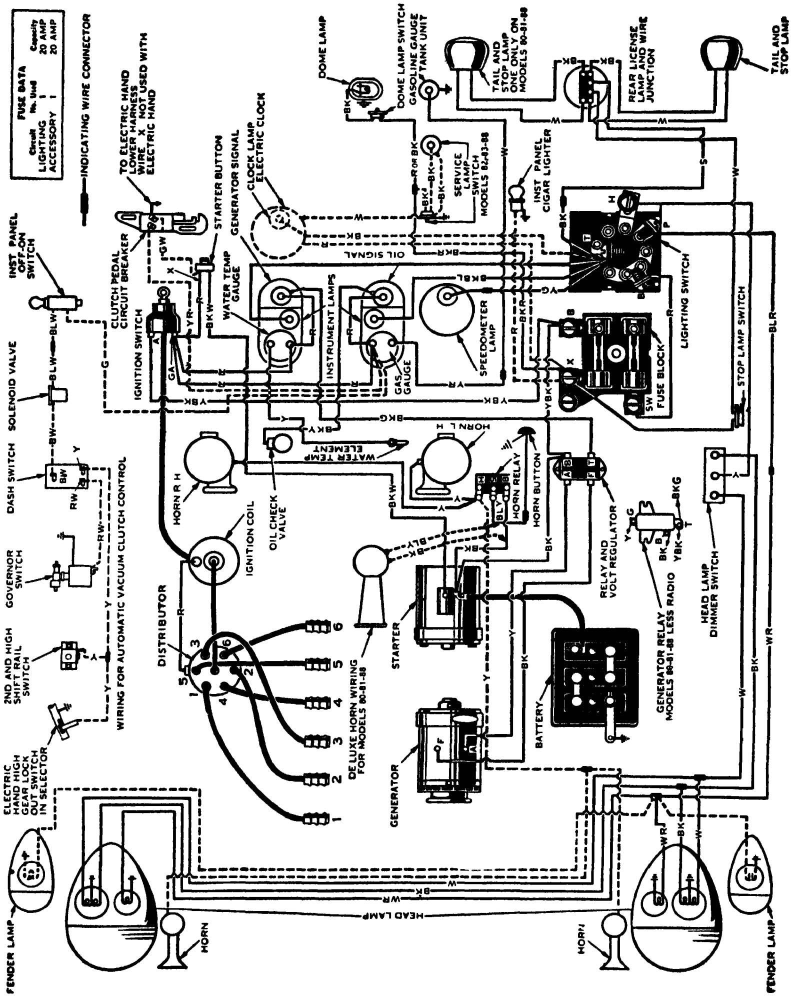
Clutch Long **Facings** Composition 6″ x 9.5″ x .125″ 2 Required

Gear Ratio 4.55-1 Hypoid Gears

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front 19¹¹⁄₁₆″ x 2¼″ x ³⁄₁₆″ Clearance Anchor .005″ Piston .010″
Rear 19¹¹⁄₁₆″ x 2¼″ x ³⁄₁₆″ Clearance Anchor .005″ Piston .010″
Hand Rear Service
Lining Moulded

Diagram 38-24



TERRAPLANE WIRING DIAGRAM, 1938, SERIES 81
Courtesy of Hudson Motor Car Company

Terraplane Model 6-Cylinder **Year 1938 Series 81**

Battery National **Type** 17 Plate **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting Mazda 2331 **Head Lights** 32-32 C.P., 6-8 Volts
Mazda 51,55,1158 **Dash, Tail and Stop** 1½-3-21 C.P., 6-8 Volts
63 **Side Lights** 3 C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 18 Amps. **Speed**
Regulation 3rd Brush **Cut-In** 7.0 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. Champion **Gap** .032″
Firing Order 1-5-3-6-2-4
Timing T.D.C. Retard

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 2—3/16″; Comp. 2—3/16″
Diam. 3″ **Gap** .009″-.011″
Oiling—Type Plunger **Capacity** 6 Qts.

Valves **Intake Timing—Open** 10½° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 18½° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter

Cooling System Centrifugal **Type** Pump **Capacity** 12½ Qts.

Steering Caster 1°-2°, Camber 1°-1½°, Toe In 0-⅛″

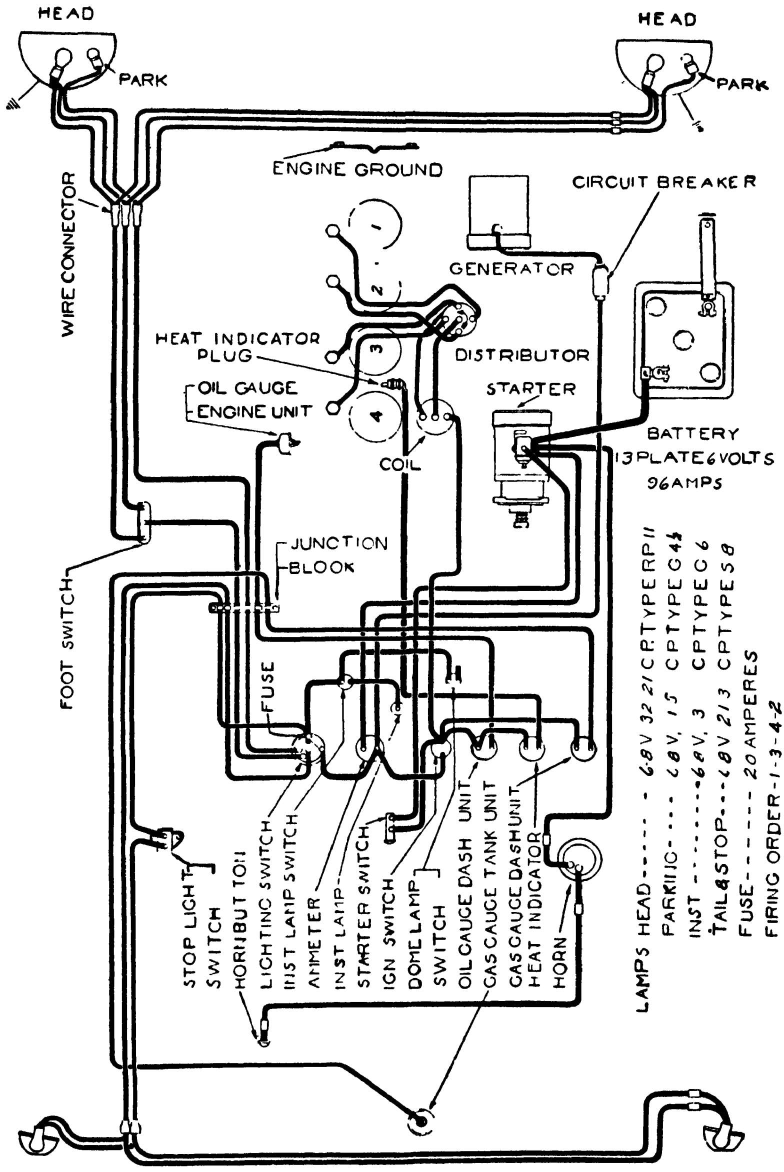
Clutch Single Plate **Facings** Cork Insert 5⅜″ x 8⅝″ x .203″

Gear Ratio 4⅑-1

Axle Semi-Floating Spiral Gears

Brakes Bendix Hydraulic
Front 22⅛″ x 1¾″ x 7/32″ **Clearance** .010″
Rear 22⅛″ x 1¾″ x 7/32″ **Clearance** .010″
Hand Rear Service
Lining Moulded

Diagram 38-25



WILLYS WIRING DIAGRAM, 1938, SERIES 38
Courtesy of Willys-Overland Incorporated

Willys **Model 4-Cylinder** **Year 1938** **Series 38**

Battery U. S. L. **Type** 13 Plate **Volts** 6 **Amps.** 96
Frame Connection Negative

Lighting RP-11 **Head Lights** 32-21 C.P., 6-8 Volts
G6 and 58 **Dash, Tail and Stop** 3-3-21 C.P., 6-8 Volts
G 4½ **Side Lights** 1-5 C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Cold **Max. Chg. Rate** 16 Amps. **Speed** 2500 R.P.M.
Regulation 3rd Brush **Cut-In** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 18 M.M. Champion **Gap** .025″
Firing Order 1-3-4-2
Timing 5° A.T.C. Retard

Engine **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 15.6
Piston Ring—Width Oil 1—3/16″; Comp. 3—3/32″
Diam. 3⅛″ **Gap** .008″
Oiling—Type Pump **Capacity** 4 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 45° A.B.C.
Intake Clearance .010″ Cold
Exhaust Timing—Open 40° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .010″ Cold

Carburetor Tillotson

Cooling System Centrifugal **Type** Pump **Capacity** 11 Qts.

Steering Camber 2°, Caster 3°, Toe In 3/32″

Clutch Borg & Beck **Facings** Moulded 5⅛″ x 7⅞″ x ⅛″ 2 Required

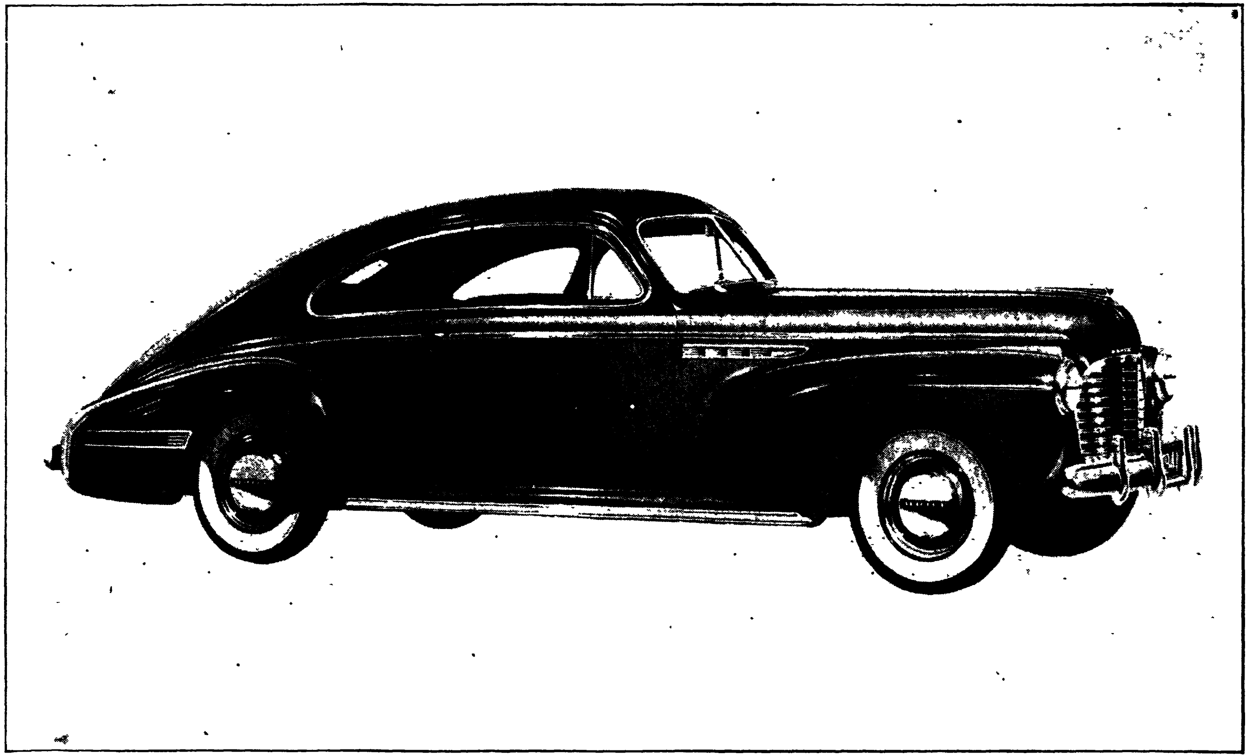
Gear Ratio Ring Gear 43 Pinion 10

Axle Semi-Floating Spiral Gears

Brakes Bendix Mechanical
- **Front** 19 3/16″ x 1¾″ x 3/16″ Clearance .010″
- **Rear** 19 3/16″ x 1¾″ x 3/16″ Clearance .010″
- **Hand** 4 Wheels

Lining Moulded

Diagram 38-26



1941 BUICK, MODEL 46-S

Courtesy of Buick Motor Division, G. M. S. C.

Index
Wiring Diagrams
and
Data Sheets
for
1939 Cars

WIRING DIAGRAMS AND DATA SHEETS

CHART OF ABBREVIATIONS

GENERAL

Amps.—Amperes
V.—Volts
C.P.—Candle Power
R.& L. of Firing Order—Right and left determined from driver's seat
Max. Chg. Rate—Maximum Charging Rate
R.P.M.—Revolutions per Minute
D.C.—Double Contact
MM.—Millimeters
Side Lights—Side or Parking Lights
Air Gap—Contacts Closed
Oil—Oil Ring
Comp.—Compression Ring

IGNITION AND VALVE TIMING

B.T.D.C. or B.T.C.—Before Top Dead Center
B.B.D.C. or B.B.C.—Before Bottom Dead Center
A.B.D.C. or A.B.C.—After Bottom Dead Center
A.T.D.C. or A.T.C.—After Top Dead Center
T.D.C. at Retard—Top Dead Center; Spark Control Retarded
12° past T.D.C.—Piston 12° past T.D.C. Spark Control Retarded
2½" before T.D.C.—Piston 2½", on Flywheel, before T.D.C.
"Ret" at Retard—Marks "Ret" on Flywheel

LUBRICATION SYSTEM

Gals.—Gallons
Qts.—Quarts
Press.—Pressure to Main Bearings
Splash—Pressure Circulating Splash
Splash—Connecting Rod Dips

REAR AXLE

Semi—Semi-Floating
¾ Flt.—Three-quarters Floating
Full Flt.—Full Floating

CLUTCH

Disc.—Multiple disc, either wet or dry
Plate—Single or Double Plate Type

BRAKES

Front—Front Wheels
Rear—Rear Wheels
Hand—Hand Brake
Trans.—Transmission Brake

INDEX

1939 Wiring Diagrams and Data Sheets

American Bantam **Model** 4-Cylinder **Year** 1939 **Series**

Battery U.S.L. **Type** 11-Plate **Volts** 6 **Amps.** 67
Frame Connection Negative

Lighting **Head Lights**
Dash, Tail and Stop
Parking Lights

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 10 Amps. **Speed** 2900 R.P.M.
Regulation 3rd Brush **Cut-in** 7.0 Volts, 880 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .022″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-3-4-2
Timing 2° B.T.C.

Engine **Bore** 2.3″ **Stroke** 3″ **Taxable H.P.** 7.75
Piston Ring—Width Oil 1—1/8″ Comp., 2—3/32″
Diam. 2.3″ **Gap** Oil .011″ Comp., .006″
Oiling—Type Pump Vane **Capacity** 3 qts.

Valves **Intake Timing—Open** 19° B.T.C. **Close** 50° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 57° B.B.C. **Close** 12° A.T.C.
Exhaust Clearance .006″ Hot

Carburetor Tillotson USI

Cooling System **Type** **Capacity** 6 qts.

Steering **Camber** 1/2° **Caster** 5° **Toe-In** 1/16″

Clutch Rockford **Facings** Moulded 6 1/2″ x 8 7/16″ x 1/8″ 2 Required

Gear Ratio **Type** Spiral

Axle Semi-Floating

Brakes Mechanical
- **Front** 17″ x 1 1/8″ x 3/16″ **Clearance** .010″
- **Rear** 17″ x 1 1/8″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Semi-Moulded

Cadillac **Model V-8** **Year 1939** **Series 60S-61-75**

Battery Delco **Type** 17-Plate **Volts** 6 **Amps.** 112
Frame Connection Positive

Lighting **Head Lights** Mazda 2330-L, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 55, C.P. 2, Volts 6-8; 1154, C.P. 3-21 Volts 6-8
Parking Lights Mazda 55, C.P. 2, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 27 Amps. **Speed** 4000 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 6 Volts, 850 R.P.M.

Ignition **Contact Breaker Gap** .012″-.018″
Spark Plug—Size 10 M.M. **Gap** .025″-.030″
Firing Order 1-8-7-3-6-5-4-2
Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 4½″ **Taxable H.P.** 39.2
Piston Ring—Width Oil 2—5/32″ Comp. 2, 1—⅛″, 1—3/32″
Diam. 3½″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 7 qts.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.
Intake Clearance Hydraulic
Exhaust Timing—Open 52° B.D.C. **Close** 10° A.T.C.
Exhaust Clearance Hydraulic

Carburetor Stromberg AAZ26

Cooling System Centrifugal **Type** Pump **Capacity** 24½ qts.

Steering **Camber**—¼° **Caster**—¼° **Toe-In** 1/32″

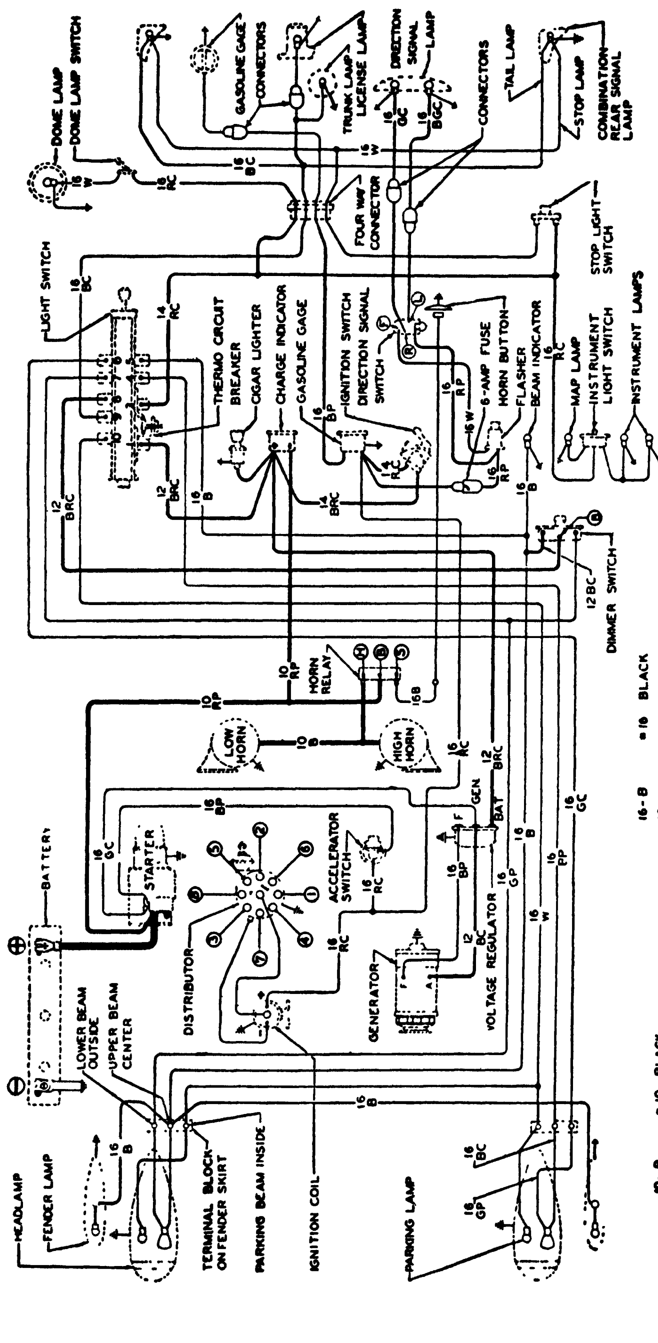
Clutch Long **Facings** Woven 7″ x 11″ x .137″ 2 Required

Gear Ratio 47 to 12 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 24½″ x 2″-2¼″ x 3/16″ **Clearance** .010″
- **Rear** 24½″ x 2″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded



10-B	#10	BLACK	16-B	#16	BLACK
10-RP	#10	RED PARALLEL TRACERS	16-W	#16	WHITE
12-BC	#12	BLACK CROSSING TRACERS	16-BGC	#16	BLACK AND GREEN CROSSING TRACERS
12-BRC	#12	BLACK AND RED CROSSING TRACERS	16-GP	#16	GREEN PARALLEL TRACERS
14-RC	#14	RED CROSSING TRACERS	16-BC	#16	BLACK CROSSING TRACERS
14-BRC	#14	BLACK AND RED CROSSING TRACERS	16-RC	#16	RED CROSSING TRACERS
16-RP	#16	RED PARALLEL TRACERS	16-GC	#16	GREEN CROSSING TRACERS
			16-BP	#16	BLACK PARALLEL TRACERS

BUICK WIRING DIAGRAM, 1939, SERIES 40-60
Courtesy of Buick Motor Company

Buick **Model** 8-Cylinder **Year** 1939 **Series** 40

Battery Delco **Type** 17-Plate **Volts** 6 **Amps.** 115

Frame Connection Negative

Lighting **Head Lights** Mazda 2320L, C.P. 32-21, Volts 6-8

Dash, Tail and Stop Mazda 55 C.P. 1.5, 1154 C.P. 3-21, Volts 6-8

Parking Lights Mazda 55, C.P. 1.5, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 25 Amps. **Speed** 4000 R.P.M.

Regulation Volt., 3rd Brush **Cut-in** 6.4 Volts, 800 R.P.M.

Relay Air Gap .015″ to .025″ **Contact Gap** .008″ to .013″

Ignition Delco **Contact Breaker Gap** .015″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing 2° B.T.C.

Engine **Bore** 3 3/32″ **Stroke** 4 1/8″ **Taxable H.P.** 30.63

Piston Ring—Width Oil 2—3/16″ Comp. 2—1/8″ top, next 3/32″

Diam. 3 3/32″ **Gap** .010″ to .015″ on all

Oiling—Type Pump Gear **Capacity** 6 qts.

Valves **Intake Timing—Open** 13° B.T.C. **Close** 68° A.B.C.

Intake Clearance .015″ Hot

Exhaust Timing—Open 55° B.B.C. **Close** 22 A.T.C.

Exhaust Clearance .015″ Hot

Carburetor Carter WDO

Cooling System Centrifugal **Type** Pump **Capacity** 13 1/4 qts.

Steering **Camber**—1/4° **Caster**—7/8° **Toe-In** 0″

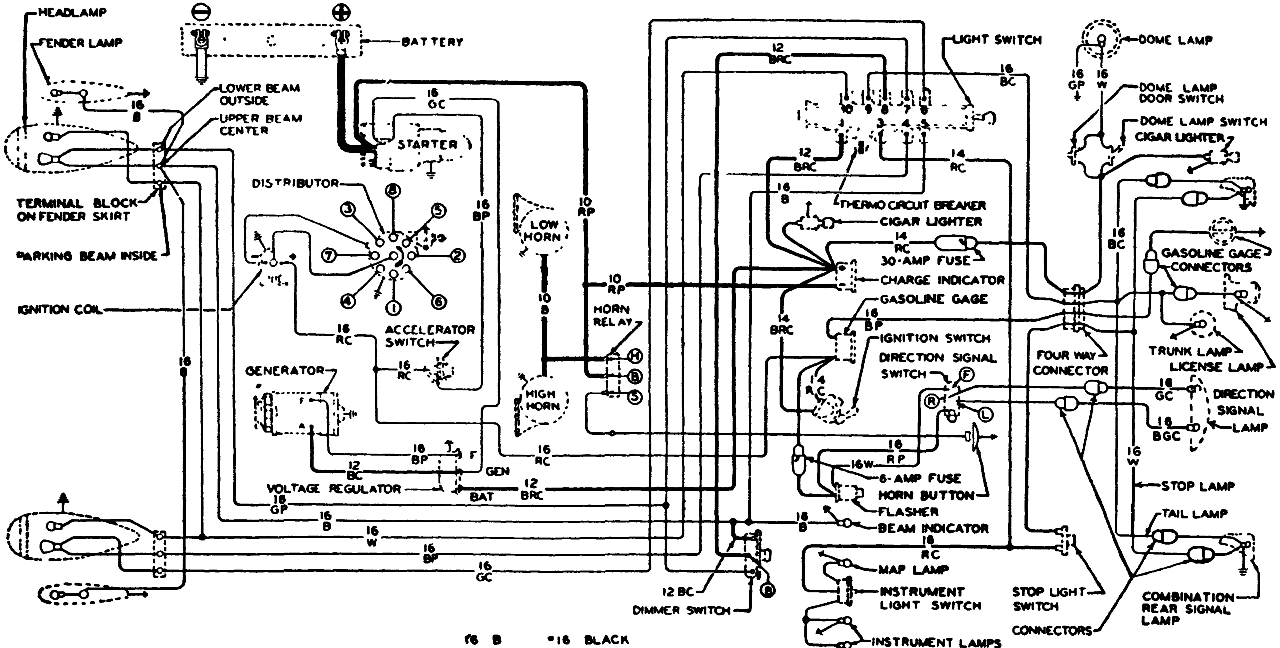
Clutch Borg **Facings** Woven 7″ x 10″ x 1/8″ 2 Required

Gear Ratio 40-9 **Type** Hypoid

Axle Semi-Floating

Brakes Hydraulic
- **Front** 22 11/16″ x 1 3/4″ x 3/16″ **Clearance** .010″
- **Rear** 22 11/16″ x 1 3/4″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Woven and Moulded



10-B	#10	BLACK	16 B	#16	BLACK
10-RP	#10	RED PARALLEL TRACERS	16 W	#16	WHITE
12-BC	#12	BLACK CROSSING TRACERS	16 BGC	#16	BLACK AND GREEN CROSSING TRACERS
12-BRC	#12	BLACK AND RED CROSSING TRACERS	16 GP	#16	GREEN PARALLEL TRACERS
14-RC	#14	RED CROSSING TRACERS	16 BC	#16	BLACK CROSSING TRACERS
14-BRC	#14	BLACK AND RED CROSSING TRACERS	16 RC	#16	RED CROSSING TRACERS
16-RP	#16	RED PARALLEL TRACERS	16 GC	#16	GREEN CROSSING TRACERS
			16 BP	#16	BLACK PARALLEL TRACERS

BUICK WIRING DIAGRAM, 1939, SERIES 80-90
Courtesy of Buick Motor Company

Buick **Model 8-Cylinder** **Year 1939** **Series 80-90**

Battery Delco **Type** 17-Plate **Volts** 6 **Amps.** 115
Frame Connection Negative

Lighting **Head Lights** Mazda 2320L, C.P. 32-21, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1.5, 1154 C.P. 3-21, Volts 6-8
Parking Lights Mazda 55, C.P. 1.5, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 25 Amps. **Speed** 4200 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 6.4 Volts, 800 R.P.M.
Relay Air Gap .015″ to .025″ **Contact Gap** .008″ to .013″

Ignition **Contact Breaker Gap** .015″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 3° B.T.C.

Engine **Bore** $3\frac{7}{16}$″ **Stroke** $4\frac{5}{16}$″ **Taxable H.P.** 37.81
Piston Ring—Width Oil 2—$\frac{3}{16}$″ Comp., 2—$\frac{1}{8}$″ top, next $\frac{3}{32}$″
Diam. $3\frac{7}{16}$″ **Gap** .010″ to .015″ on all
Oiling—Type Pump Gear **Capacity** 8 qts.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.B.C.
Exhaust Clearance .015″ Hot

Carburetor Stromberg AAV-26

Cooling System Centrifugal **Type** Pump **Capacity** 17 qts.

Steering **Camber**—$\frac{1}{4}$° **Caster**—$\frac{7}{8}$° **Toe-In** 0″

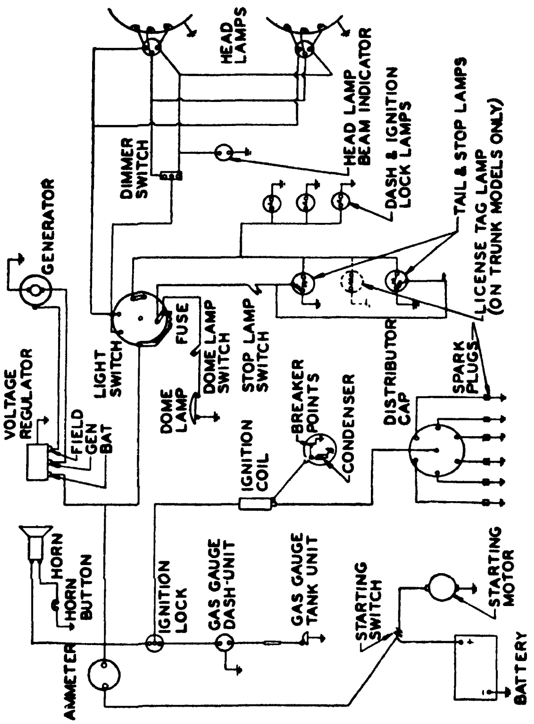
Clutch Borg **Facings** Woven $6\frac{1}{2}$″ x $10\frac{1}{2}$″ x $\frac{1}{8}$″ 2 Required

Gear Ratio 60-39-10, 80-46-11, 90-41-9 **Type** Hypoid

Axle Semi-Floating

Brakes
- **Front** $22\frac{11}{16}$″ x 2″ x $\frac{3}{16}$″ **Clearance** .010″
- **Rear** $22\frac{11}{16}$″ x 2″ x $\frac{3}{16}$″ **Clearance** .010″
- **Hand** Rear Service on 90°, Lining $\frac{1}{4}$″ Thick

Lining Woven and Moulded



CHEVROLET WIRING DIAGRAM, 1939, 6-CYLINDER MODEL
Courtesy of Chevrolet Motor Company

Chevrolet Model 6-Cylinder Year 1939 Series

Battery Delco **Type** 17-Plate **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Head Lights**
Dash, Tail and Stop
Parking Lights

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 26 Amps. **Speed** 3600 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 6.5 Volts, 800 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco **Contact Breaker Gap** .018″-.024″
Spark Plug—Size AC-46, 14 M.M. **Gap** .040″
Firing Order 1-5-3-6-2-4
Timing 5° B.T.C.

Engine **Bore** $3\frac{1}{2}''$ **Stroke** $3\frac{3}{4}''$ **Taxable H.P.** 29.4
Piston Ring—Width Oil 1—$\frac{3}{16}''$ Comp., 2—$\frac{1}{8}''$
Diam. $3\frac{1}{2}''$ **Gap** .010″ on all
Oiling—Type Pump Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 9° B.T.C. **Close** 29° A.B.C.
Intake Clearance .006″ to .008″ Hot
Exhaust Timing—Open 52° B.B.C. **Close** 1° B.T.C.
Exhaust Clearance .013″ to .015″ Hot

Carburetor Carter 420OS

Cooling System Centrifugal **Type** Pump **Capacity** 14 Qts.

Steering **Camber** 1° **Caster** $2\frac{1}{4}°$ **Toe-In** $\frac{5}{64}''$

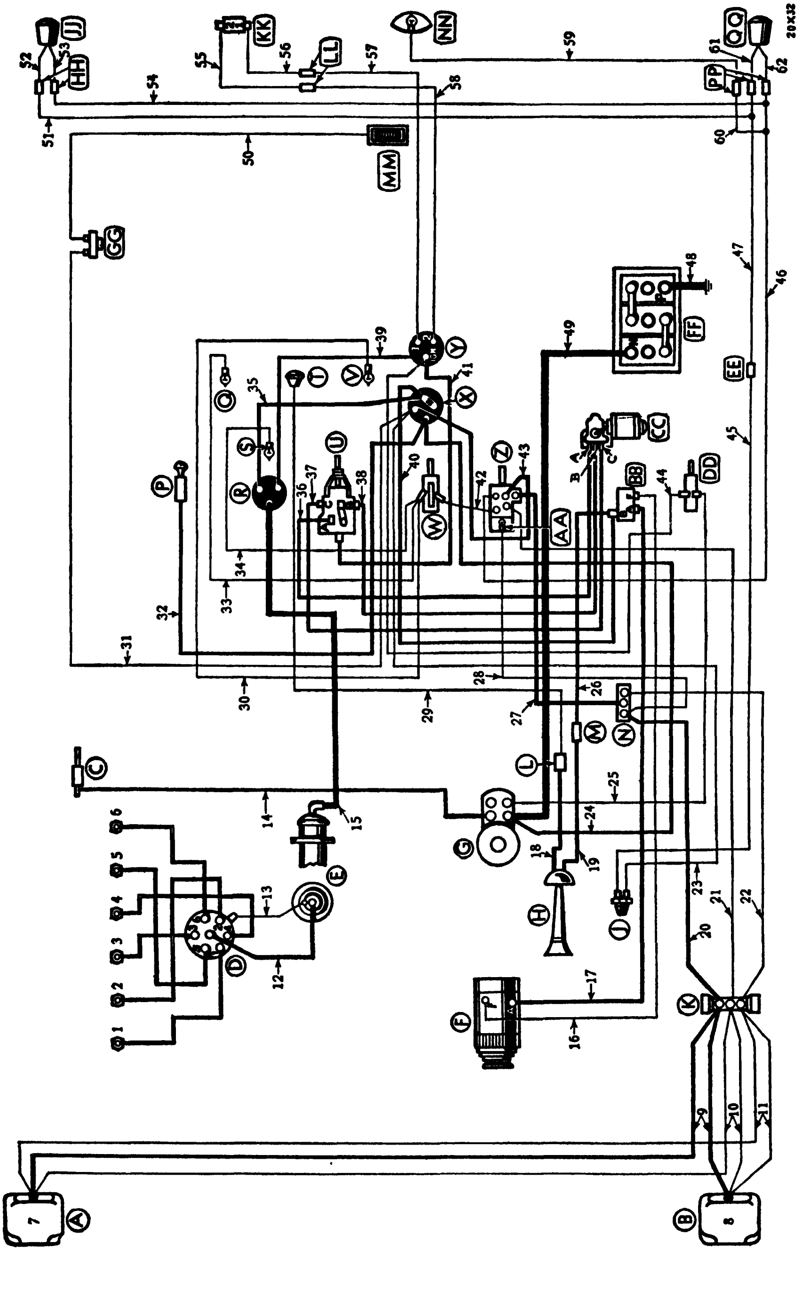
Clutch Own **Facings** Moulded $6\frac{1}{4}'' \times 9'' \times \frac{1}{8}''$ 2 Required

Gear Ratio Master 41-11 De Luxe 38-9 **Type** Hypoid

Axle Semi-Floating

Brakes Hydraulic
- **Front** $22\frac{5}{8}'' \times 1\frac{3}{4}'' \times \frac{3}{16}''$ **Clearance** } Slight Drag and Back
- **Rear** $22\frac{5}{8}'' \times 1\frac{3}{4}'' \times \frac{3}{16}''$ **Clearance** } Off 4 Notches
- **Hand** Rear Service

Lining Moulded



CHRYSLER WIRING DIAGRAM, 1939, ROYAL 6 MODEL
Courtesy of Chrysler Corporation

Chrysler **Model Royal 6** **Year 1939** **Series**

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 115
Frame Connection Positive

Lighting **Head Lights** Mazda 2331, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1½, 1158 C.P. 21-3, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 2500 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 7 Volts, 850 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 8° B.T.C. **Close** 42° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Carter E6N1

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts.

Steering **Camber** ¼° **Caster** ½° **Toe-In** 1/16″

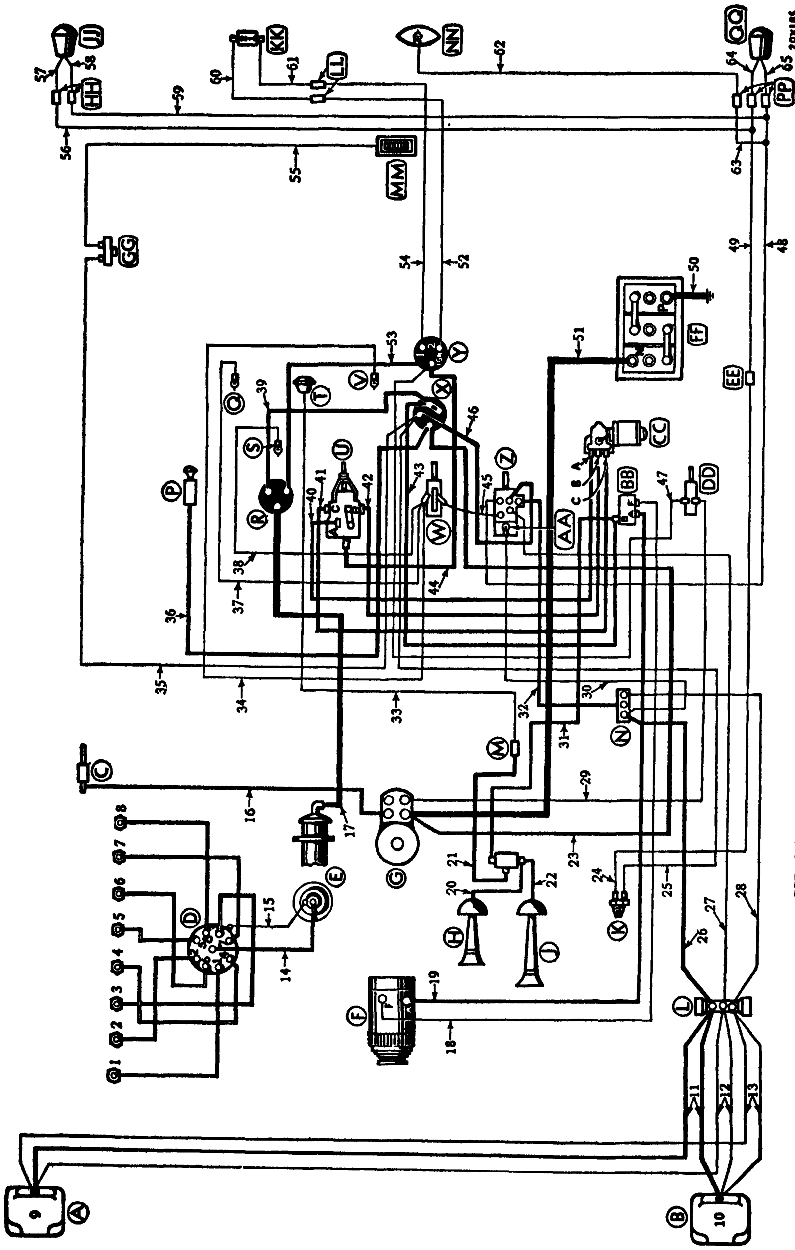
Clutch Borg **Facings** Woven 7″ x 10″ x ⅛″ 2 Required

Gear Ratio 41-10 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 19 7/16″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Rear** 19 7/16″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Hand** Transmission 17 1/16″ x 2″ x 5/32″ **Clearance** .025″

Lining Moulded



CHRYSLER WIRING DIAGRAM, 1939, IMPERIAL 8 MODEL
Courtesy of Chrysler Corporation

Chrysler **Model Imperial 8** **Year 1939** **Series**

Battery Willard **Type** 17-Plate **Volts** 6 **Amps.** 136
Frame Connection Positive

Lighting **Head Lights** Mazda 2331, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1½, 1158 C.P. 21-3, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 2200 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 7 Volts, 820 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .018″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3¼″ **Stroke** 4⅞″ **Taxable H.P.** 33.80
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3¼″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 6° B.T.C. **Close** 50° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 44° B.B.C. **Close** 12° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Stromberg

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 24 Qts.

Steering **Camber** 0° **Caster**—½° **Toe-In** 1/16″

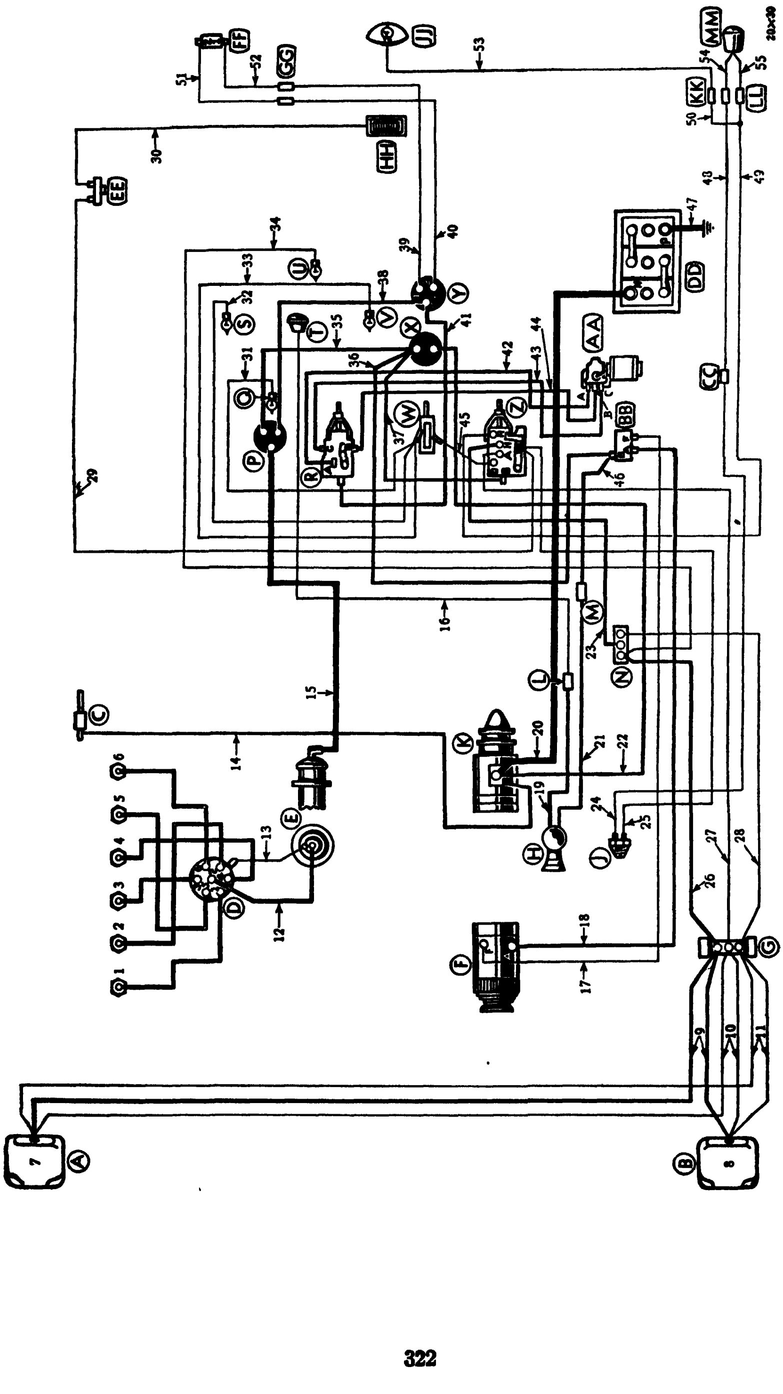
Clutch Borg **Facings** Woven, 6½″ x 11″ x ⅛″ 2 Required

Gear Ratio 43-11 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 25⅛″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Rear** 25⅛″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Hand** Transmission 17 1/16″ x 2″ x 5/32″ **Clearance** .025″

Lining Moulded



DE SOTO WIRING DIAGRAM, 1939, 6-CYLINDER MODEL
Courtesy of Chrysler Corporation

GASOLINE AUTOMOBILES

De Soto   Model 6-Cylinder   Year 1939   Series

Battery Willard **Type** **Volts** 6 **Amps.** 105

Frame Connection Positive

Lighting **Head Lights** Mazda 2331, C.P. 32-32, Volts 6-8

Dash, Tail and Stop Mazda 55 C.P. 1$\frac{1}{2}$, 1158 C.P. 21-3, Volts 6-8

Parking Lights Mazda 55, C.P. 1$\frac{1}{2}$, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 2500 R.P.M.

Regulation Volt., 3rd Brush **Cut-in** 7 Volts, 850 R.P.M.

Ignition **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 2° B.T.C.

Engine **Bore** 3$\frac{3}{8}$″ **Stroke** 4$\frac{1}{4}$″ **Taxable H.P.** 27.34

Piston Ring—Width Oil 2—$\frac{5}{32}$″ Comp. 2—$\frac{1}{8}$″

Diam. 4$\frac{1}{4}$″ **Gap** .007″ on all

Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 8° B.T.C. **Close** 42° A.B.C.

Intake Clearance .008″ Hot

Exhaust Timing—Open 48° B.B.C. **Close** 2° A.T.C

Exhaust Clearance .010″ Hot

Carburetor Carter Ball and Ball E6N1

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 19 Qts.

Steering **Camber** Plus $\frac{1}{4}$° **Caster** $\frac{1}{2}$° to 2$\frac{1}{2}$° **Toe-In** $\frac{1}{16}$″

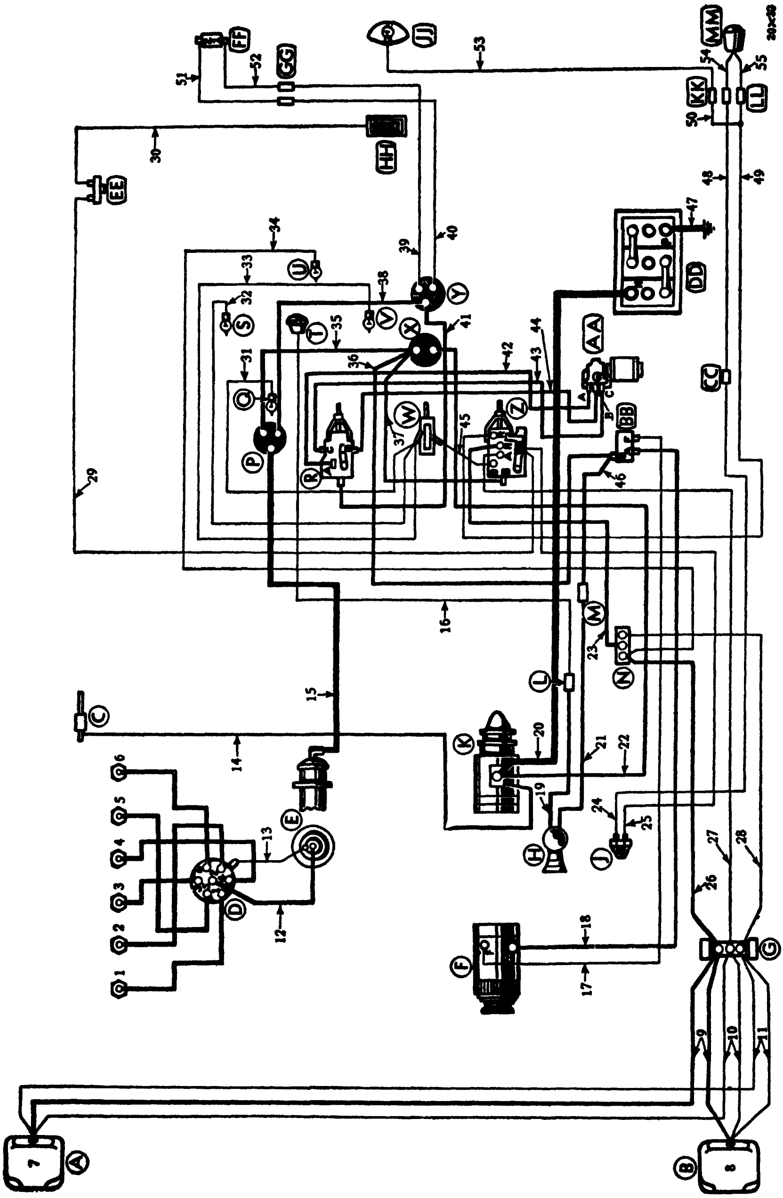
Clutch Borg **Facings** Woven 7″ x 10″ x $\frac{1}{8}$″ 2 Required

Gear Ratio Ring 41 Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 19$\frac{7}{16}$″ x 2″ x $\frac{13}{64}$″ **Clearance Toe** .012″ **Heel** .006″
- **Rear** 19$\frac{7}{16}$″ x 2″ x $\frac{13}{64}$″ **Clearance Toe** .012″ **Heel** .006″
- **Hand** 17$\frac{1}{16}$″ x 2″ x $\frac{5}{32}$″ **Clearance** .025″ Transmission

Lining Moulded



DODGE WIRING DIAGRAM, 1939, 6-CYLINDER MODEL
Courtesy of Chrysler Corporation

Dodge **Model** 6-Cylinder **Year** 1939 **Series**

Battery Auto-Lite **Type** 15-Plate **Volts** 6 **Amps.** 95
Frame Connection Positive

Lighting **Head Lights** Mazda 2331, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1½, 1158 C.P. 21-3, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 2500 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 7 Volts, 850 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35
Piston Ring—Width Oil 2—5/32″; Comp. 2—⅛″
Diam. 3¼″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 15 Qts.

Steering **Camber** 0° **Caster**—½° **Toe-In** 1/16″

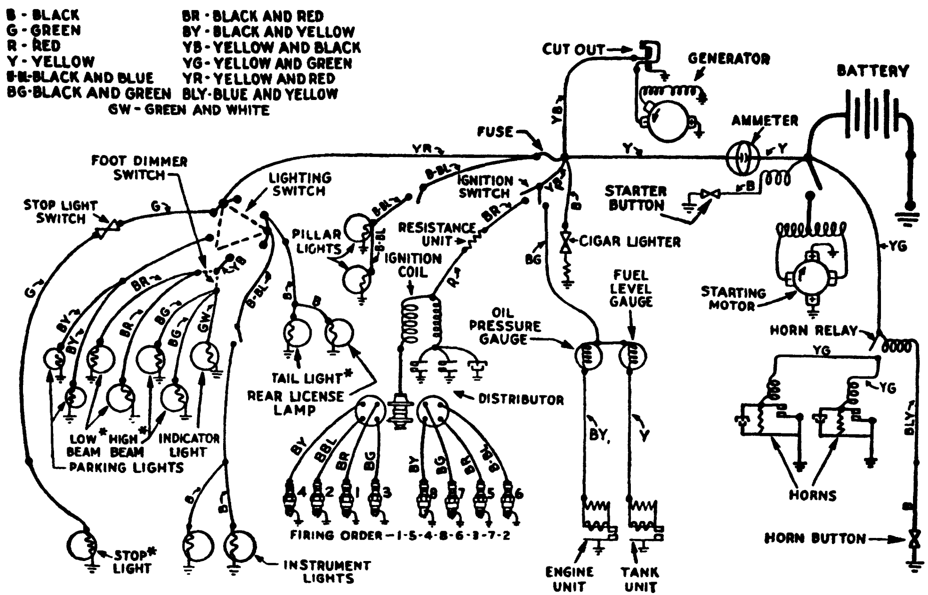
Clutch Borg **Facings** Woven, 7″ x 10″ x ⅛″ 2 Required

Gear Ratio 41–10 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 19 7/16″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Rear** 19 7/16″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Hand** Transmission, 17 1/16″ x 2″ x 5/32″ **Clearance** .025″

Lining Moulded



FORD WIRING DIAGRAM, PASSENGER AND COMMERCIAL, 1939, SERIES V-8-60
Courtesy of Ford Motor Company

Ford V-8 Model Passenger & Commercial Year 1939 Series V-8-60

Battery Ford **Type** 17-Plate **Volts** 6 **Amps.** 100
Frame Connection Positive

Lighting **Head Lights** C.P. 32, Volts 6-8
Dash, Tail and Stop C.P. 1, C.P. 3, C.P. 21, Volts 6-8
Parking Lights C.P. 1½, Volts 6-8

Starter and Generator Ford, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 17 Amps. **Speed** 1300 R.P.M.
Regulation 3rd Brush **Cut-in** 7 Volts at 600 R.P.M.
Speed 10 M.P.H.

Ignition Own **Contact Breaker Gap** .014″ to .016″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-4-8-6-3-7-2, No. 1 on front right bank
Timing 4° B.T.C.

Engine **Bore** 2.6″ **Stroke** 3.2″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 1—5/32″; Comp. 2—3/32″
Diam. 2.6″ **Gap** .005″ on all
Oiling—Type Pump Gear **Capacity** 4 Qts.

Valves **Intake Timing—Open** 9½° B.T.C. **Close** 54½° A.B.C.
Intake Clearance .0125″
Exhaust Timing—Open 57½° B.B.C. **Close** 6½° A.T.C.
Exhaust Clearance .0125″

Carburetor Stromberg

Cooling System Pump **Type** Centrifugal **Capacity** 15 Qts.

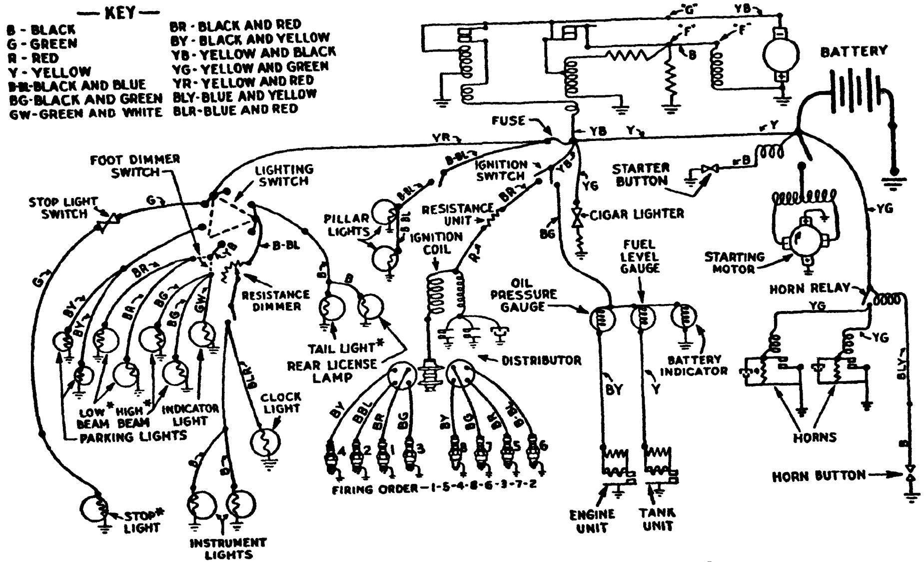
Steering **Camber** ¼° **Caster** 4½° **Toe-In** 1/16″

Clutch Long **Facings** Woven, 6″ x 8½″ x ⅛″ 2 Required

Gear Ratio 40-9 **Type** Spiral Gears

Axle ¾ Floating

Brakes Lockheed Hydraulic
- **Front** 23⅛″ x 1¾″ x .20″ **Clearance** .010″
- **Rear** 23⅛″ x 1¾″ x .20″ **Clearance** .010″
- **Hand** Rear Service
- **Lining**



FORD WIRING DIAGRAM, 1939, MODEL V-8 DELUXE
Courtesy of Ford Motor Company

Ford **Model V-8 De Luxe** **Year 1939** **Series 85**

Battery Ford **Type** 17-Plate **Volts** 6 **Amps.** 100
Frame Connection Positive

Lighting **Head Lights** C.P. 32, Volts 6-8
Dash, Tail and Stop C.P. 1, C.P. 3, C.P. 21, Volts 6-8
Parking Lights C.P. $1\frac{1}{2}$, Volts 6-8

Starter and Generator Ford, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 26 Amps. **Speed** 1200 R.P.M.
Regulation Voltage **Cut-in** 7 Volts Car Speed 10 M.P.H.

Ignition Own **Contact Breaker Gap** .014″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-4-8-6-3-7-2 No. 1 on front right bank
Timing 4° B.T.C.

Engine **Bore** 3.062″ **Stroke** 3.75″ **Taxable H.P.** 30
Piston Ring—Width Oil 1—$\frac{5}{32}$″ Comp. 2—$\frac{3}{32}$″
Diam. 3.062″ **Gap** .005″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 44° A.B.C.
Intake Clearance .0125″
Exhaust Timing—Open 48° B.B.C. **Close** 6° A.T.C.
Exhaust Clearance .0125″

Carburetor Stromberg

Cooling System Pump **Type** Centrifugal **Capacity** 22 Qts.

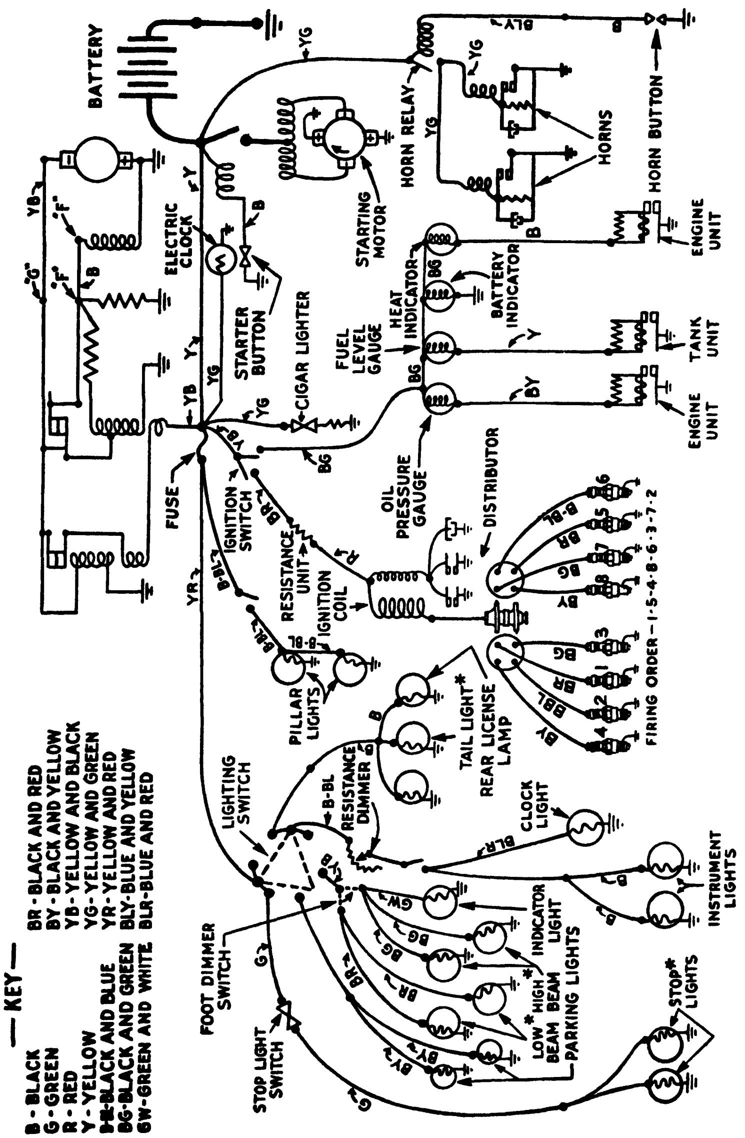
Steering **Camber** $\frac{1}{4}$° **Caster** $4\frac{1}{2}$° **Toe-In** $\frac{1}{16}$″

Clutch Long **Facings** Moulded, $5\frac{3}{4}$″ x 9″ x .137″ 2 Required

Gear Ratio 34-9 **Type** Spiral Gears

Axle $\frac{3}{4}$ Floating

Brakes Lockheed Hydraulic
Front $23\frac{1}{8}$″ x $1\frac{3}{4}$″ x .20″ **Clearance** .010″
Rear $23\frac{1}{8}$″ x $1\frac{3}{4}$″ x .20″ **Clearance** .010″
Hand Rear Service
Lining



FORD WIRING DIAGRAM, 1939, MODEL, MERCURY
Courtesy of Ford Motor Company

Ford **Model** Mercury **Year** 1939 **Series**

Battery Ford **Type** 17-Plate **Volts** 6 **Amps.** 100
Frame Connection Positive

Lighting **Head Lights** C.P. 32, Volts 6-8
Dash, Tail and Stop C.P. 1, C.P. 3, C.P. 21, Volts 6-8
Parking Lights C.P. $1\frac{1}{2}$, Volts 6-8

Starter and Generator Ford, Gen., Belt-driven

Generator **Max. Chg. Rate** 26 Amps. **Speed** 1200 R.P.M.
Regulation Voltage **Cut-in** 7 Volts at 510 R.P.M.

Ignition Own **Contact Breaker Gap** .014″ to .016″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-4-8-6-3-7-2. No. 1 on right bank front
Timing 4° B.T.C.

Engine **Bore** 3.185″ **Stroke** 3.75″ **Taxable H.P.** 32.5
Piston Ring—Width Oil 1—$\frac{5}{32}$″ Comp. 2—$\frac{3}{32}$″
Diam. 3.185″ **Gap** Oil .005″ Comp. .009″
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 44° A.B.C.
Intake Clearance .0125″ to .0135″
Exhaust Timing—Open 48° B.B.C. **Close** 6° A.T.C.
Exhaust Clearance .0125″ to .0135″

Carburetor Stromberg

Cooling System Pump **Type** Centrifugal **Capacity** 22 Qts.

Steering **Camber** $\frac{1}{4}$° **Caster** $4\frac{1}{2}$° **Toe-In** $\frac{1}{16}$″

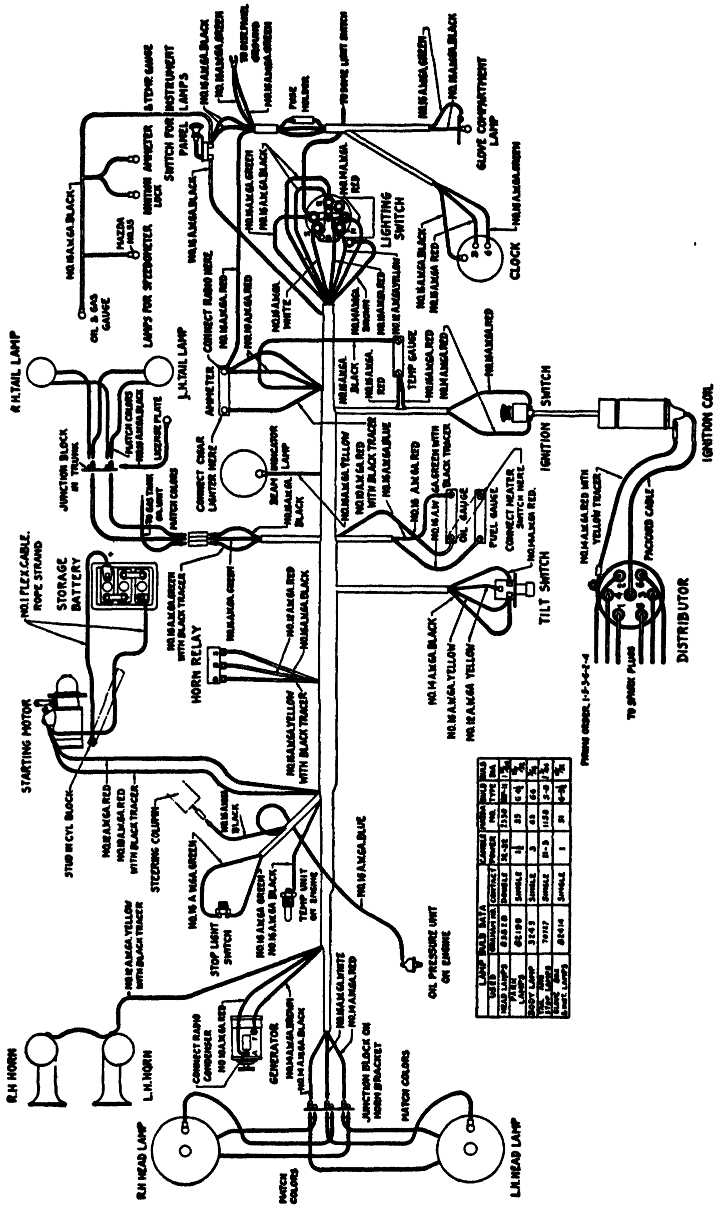
Clutch Long **Facings** Moulded $5\frac{3}{4}$″ x 9″ x .137″ 2 Required

Gear Ratio **Type** Spiral Gears

Axle $\frac{3}{4}$ Floating

Brakes Bendix Hydraulic
- **Front** $23\frac{1}{8}$″ x $1\frac{3}{4}$″ x .20″ **Clearance** .010″
- **Rear** $23\frac{1}{8}$″ x $1\frac{3}{4}$″ x .20″ **Clearance** .010″
- **Hand**

Lining



GRAHAM WIRING DIAGRAM, 1939, SPECIAL—WITHOUT RADIO
Courtesy of Graham-Paige Motors Corporation

Graham **Model** Special & Super 6 **Year** 1939 **Series**

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 95-105
Frame Connection Positive

Lighting **Head Lights** Mazda 2330, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 51, C.P. 1, Volts 6-8; 1158, C.P. 3-21, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 18 & 28 Amps. **Speed** 2900 & 3600 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 6-8 Volts

Ignition Delco **Contact Breaker Gap** .018″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing Model 96 T.D.C. Supercharge 4½° A.T.C.

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35
Piston Ring—Width Oil 2—3/32″ Comp. 2—3/32″
Diam. 3¼″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 4½° B.T.C. **Close** 47½° A.B.C.
Intake Clearance .010″ Hot
Exhaust Timing—Open 47½° B.B.C. **Close** 4½° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Marvel Spec., C2, Super, C3

Cooling System Centrifugal **Type** Pump **Capacity** 14-15 Qts.

Steering **Camber** 1° **Caster** 3° **Toe-In** ⅛″

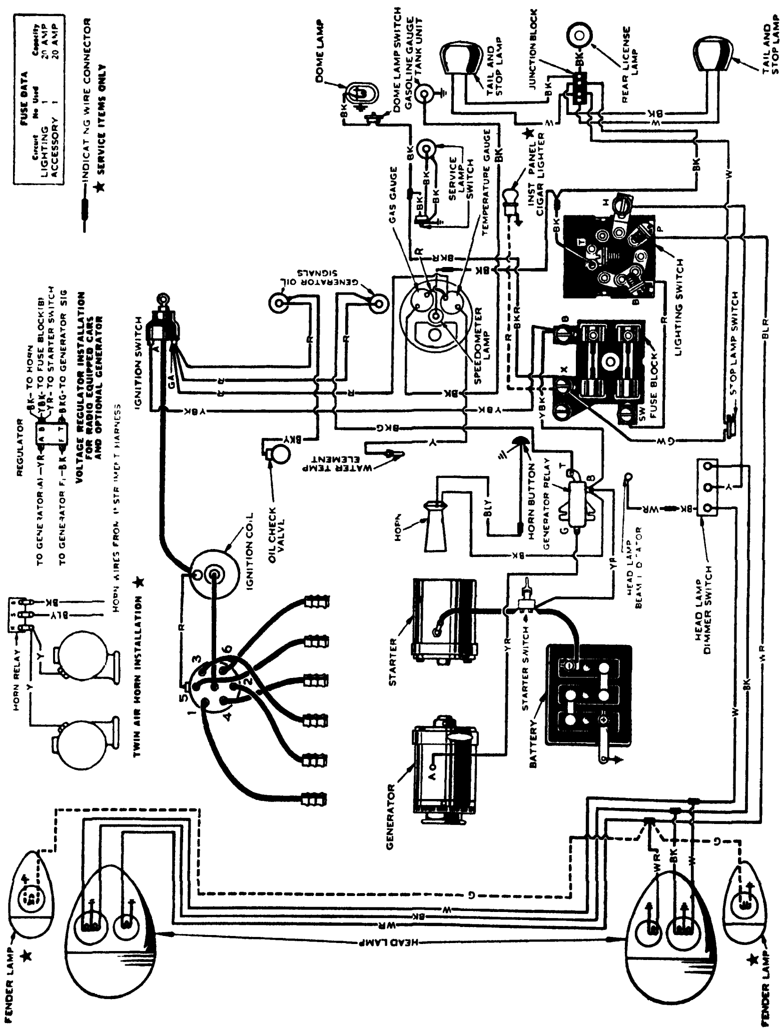
Clutch Long **Facings** Moulded 6″ x 9½″ x ⅛″ 2 Required

Gear Ratio 47 to 11 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 23″ x 1¾″ x ¼″ **Clearance** **Toe** .010″ **Heel** .006″
- **Rear** 23″ x 1¾″ x ¼″ **Clearance** **Toe** .010″ **Heel** .006″
- **Hand** 18 9/16″ x 2″ x 5/32″ Trans.

Lining Moulded



HUDSON WIRING DIAGRAM, 1939, 6-CYLINDER
Courtesy of Hudson Motor Car Company

Hudson Model 6-Cylinder Year 1939 Series 119″ Wheel Base

Battery National **Type** 17-Plate **Volts** 6 **Amps.** 96
Frame Connection Positive

Lighting **Head Lights** Mazda 2331, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 51 C.P. 1½, Mazda 1158 C.P. 3-21, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 3000 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 7 Volts, 825 R.P.M.

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size Champ. 14 M.M. **Gap** .032″
Firing Order 1-5-3-6-2-4
Timing Business Models ¼° B.T.C. Others D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 2—3/16″ Comp. 2—3/32″
Diam. 3″ **Gap** .009″ to .011″ on all
Oiling—Type Pump, Plunger **Capacity** 5½ Qts.

Valves **Intake Timing—Open** 10½° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 18½° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter 438S

Cooling System Centrifugal **Type** Pump **Capacity** 12½ Qts.

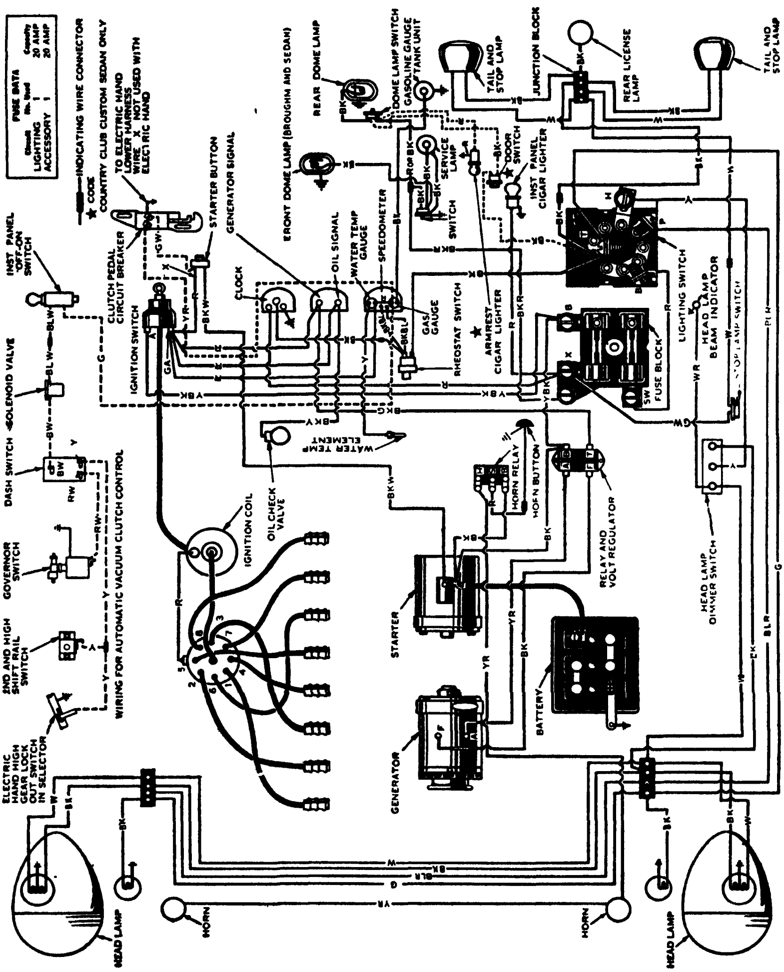
Steering **Camber** 1°-1½° **Caster** 1°-2° **Toe-In** 0″-⅛″ at Felloe

Clutch **Facings** Cork 5¼″ x 8 11/16″ x 13/64″ Single Disc

Gear Ratio 4⅛ to 1, 4⅝ to 1 **Type** Helical Bevel

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 22⅛″ x 1¾″ x 3/16″ **Clearance** .010″
Rear 22⅛″ x 1¾″ x 3/16″ **Clearance** .010″
Hand 22⅛″ x 1¾″ x 3/16″ Rear Service
Lining Moulded and Woven



HUDSON WIRING DIAGRAM, 1939, 8-CYLINDER MODEL
Courtesy of Hudson Motor Car Company

Hudson **Model 8-Cylinder** **Year 1939** **Series**

Battery National **Type** 19-Plate **Volts** 6 **Amps.** 108
Frame Connection Positive

Lighting **Head Lights** Mazda 2331, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1½, Mazda 1158 C.P. 3-21, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 3000 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 7 Volts, 825 R.P.M.

Ignition **Contact Breaker Gap** .017″
Spark Plug—Size Champ. 14 M.M. **Gap** .032″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 4½″ **Taxable H.P.** 28.80
Piston Ring—Width Oil 2—3/16″ Comp. 2—3/32″
Diam. 3″ **Gap** .009″ to .011″ on all
Oiling—Type Pump, Plunger **Capacity** 7 Qts.

Valves **Intake Timing—Open** 10½° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 18½° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter 438S

Cooling System Centrifugal **Type** Pump **Capacity** 17½ Qts.

Steering **Camber** 1°-1½° **Caster** 1°-2° **Toe-In** 0″-⅛″ at Felloe

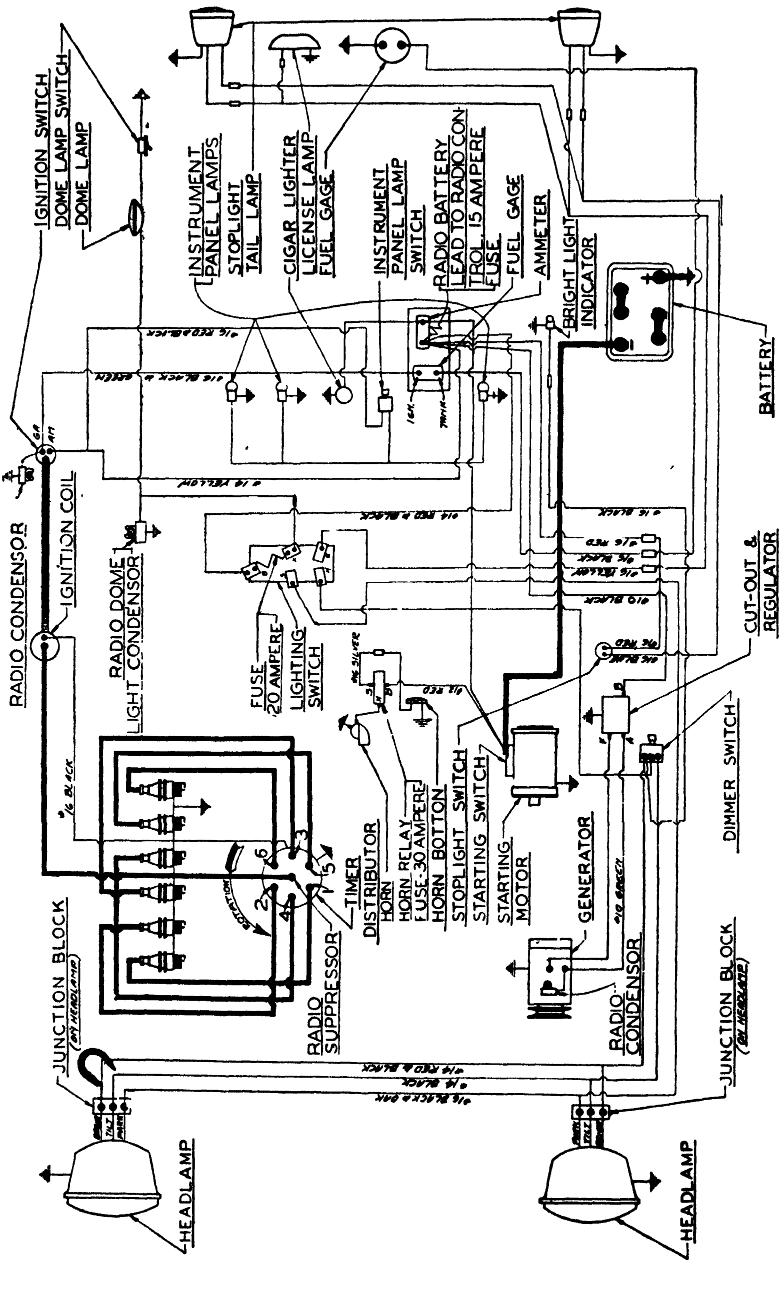
Clutch **Facings** Cork 6⅜″ x 9 13/16″ x 13/64″ Single Disc

Gear Ratio 4⅛ to 1, 4⅝ to 1 **Type** Helical Bevel

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 23 15/16″ x 1¾″ x 7/32″ **Clearance** .010″
- **Rear** 23 15/16″ x 1¾″ x 7/32″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded and Woven



HUPMOBILE WIRING DIAGRAM, 1939, 6-CYLINDER MODEL
Courtesy of Hupp Motor Car Corporation

Hupmobile Model 6-Cylinder Year 1939 Series E-822

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting **Head Lights** Mazda 2320, C.P. 21-32, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1½, 1158 C.P. 3-21, Volts 6-8
Parking Lights Mazda 63, C.P. 3, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator **Max. Chg. Rate** 28 Amps. **Speed** 3200 R.P.M.
Regulation Voltage & 3rd **Cut-in** 7 Volts Car Speed 9.5 M.P.H.

Ignition Auto-Lite **Contact Breaker Gap** .018″-.020″
Spark Plug—Size 18 M.M. **Gap** .026″-.030″
Firing Order 1-5-3-6-2-4
Timing 7° B.T.C.

Engine **Bore** 3½″ **Stroke** 4¼″ **Taxable H.P.** 29.42
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3½″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 2° B.T.C. **Close** 51° A.B.C.
Intake Clearance .010″ Hot
Exhaust Timing—Open 44° B.B.C. **Close** 3° A.T.C.
Exhaust Clearance .013″ Hot

Carburetor Carter W-1

Cooling System Pump **Type** Centrifugal **Capacity** 18 Qts.

Steering **Camber** 1° **Caster** 2° **Toe-In** 1/16″

Clutch Borg **Facings** Moulded & Woven 6⅛″ x 9⅞″ x .133″
2 Required

Gear Ratio 50–11 **Type** Spiral Gear

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 20⅞″ x 2″ x 3/16″ **Clearance Toe** .010″ **Heel** .005″
- **Rear** 20⅞″ x 2″ x 3/16″ **Clearance Toe** .010″ **Heel** .005″
- **Hand** Rear Service

Lining Moulded

Hupmobile **Model 8-Cylinder** **Year 1939** **Series H-825**

Battery Willard **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Head Lights** Mazda 2320, C.P. 21-32, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1½, 1158 C.P. 3-21, Volt 6-8
Parking Lights Mazda 63, C.P. 3, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 32 R.P.M.
Regulation Voltage & 3rd **Cut-in** 7 Volts Car Speed 9.5 M.P.H.

Ignition **Contact Breaker Gap** .015″-.017″
Spark Plug—Size 18 M.M. **Gap** .026″-.030″
Firing Order 1-4-7-3-8-5-2-6
Timing 7° B.T.C.

Engine **Bore** 3³⁄₁₆″ **Stroke** 4¾″ **Taxable H.P.** 32.51
Piston Ring—Width Oil 2—⁵⁄₃₂″ Comp. 2—⅛″
Diam. 3³⁄₁₆″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 8 Qts.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 49° A.B.C.
Intake Clearance .007″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 3° A.T.C.
Exhaust Clearance .014″ Hot

Carburetor Carter WDD

Cooling System Pump **Type** Centrifugal **Capacity** 21½ Qts.

Steering **Camber** 1¼° **Caster** 1½° **Toe-In** ¹⁄₁₆″

Clutch Long **Facings** Woven 6″ x 10″ x .137″ 2 Required

Gear Ratio 50-11 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 24⅜″ x 2″ x ³⁄₁₆″ **Clearance Toe** .010″ **Heel** .005″
- **Rear** 24⅜″ x 2″ x ³⁄₁₆″ **Clearance Toe** .010″ **Heel** .005″
- **Hand** Rear Service
- **Lining** Moulded

La Salle **Model V 8-Cylinder** **Year 1939** **Series 50**

Battery Delco **Type** 17-Plate **Volts** 6 **Amps.** 115
Frame Connection Positive

Lighting **Head Lights** Mazda 2330-L, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 55, C.P. 2, Volts 6-8; 1154, C.P. 3-21, Volts 6-8
Parking Lights Mazda 55, C.P. 2, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 27 Amps. **Speed** 4000 R.P.M.
Regulation Volt, 3rd Brush **Cut-in** 6.9 Volts, 850 R.P.M.

Ignition **Contact Breaker Gap** .012″-.018″
Spark Plug—Size 10 M.M. **Gap** .025″-.030″
Firing Order 1-8-7-3-6-5-4-2
Timing 5° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 36.5
Piston Ring—Width Oil 2—5/32″ **Comp.** 2, 1—⅛″, 1—3/32″
Diam. 3⅜″ **Gap** .007″ on all
Oiling—Type Pump Gear **Capacity** 7 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.
Intake Clearance Hydraulic
Exhaust Timing—Open 52° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Hydraulic

Carburetor Carter 423S

Cooling System Centrifugal **Type** Pump **Capacity** 25 Qts.

Steering **Camber**—¼° **Caster**—1¼° **Toe-In** 1/32″

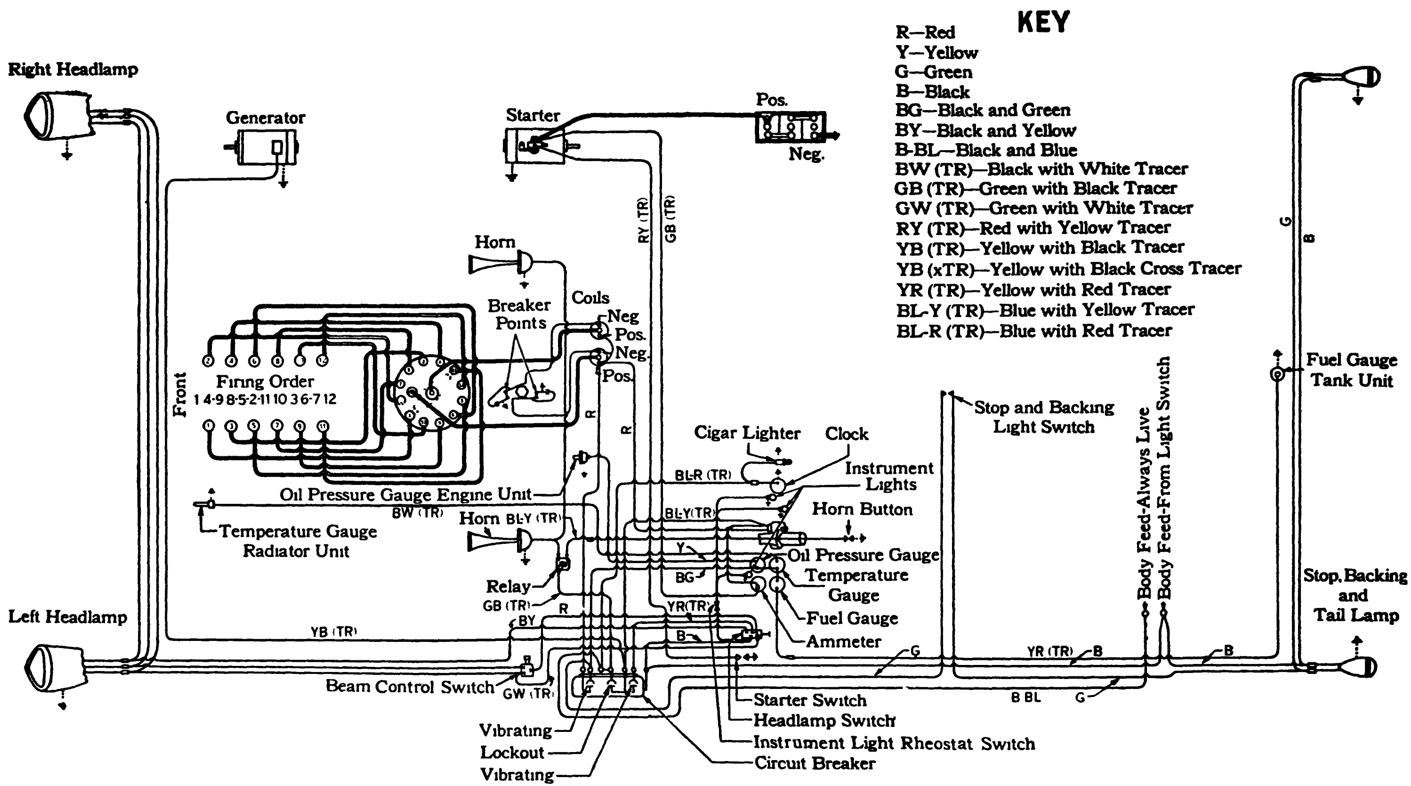
Clutch Long **Facings** Woven 6¾″ x 10″ x .137″ 2 Required

Gear Ratio 47-12 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 24½″ x 2″ x 3/16″ **Clearance** .010″
- **Rear** 24½″ x 2″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded



LINCOLN WIRING DIAGRAM, 1939, MODEL V-12
Courtesy of Ford Motor Company

Lincoln **Model V-12** **Year 1939** **Series**

Battery Exide **Type** 21 Plates **Volts** 6 **Amps.** 147
Frame Connection Negative

Lighting **Head Lights**
Dash, Tail and Stop
Parking Lights

Starter and Generator Auto-Lite, Gen., Gear-driven

Generator **Max. Chg. Rate** 15-18 Amps. **Speed** Car 20 M.P.H.
Regulation Volt., 3rd **Cut-in** 7 Volts Car Speed 7.2 M.P.H.

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size **Gap** .030″
Firing Order 1-4-9-8-5-2-11-10-3-6-7-12
Timing T.D.C.

Engine **Bore** 3⅛″ **Stroke** 4½″ **Taxable H.P.** 46.8
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅛″ **Gap** Oil .007″ Comp. .008″
Oiling—Type Pump, Gear **Capacity** 12 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance Hydraulic
Exhaust Timing—Open **Close**
Exhaust Clearance Hydraulic

Carburetor Stromberg

Cooling System Pump **Type** Centrifugal **Capacity** 8 Gals.

Steering **Camber** 1° **Caster** 1½° **Toe-In** 1/16″

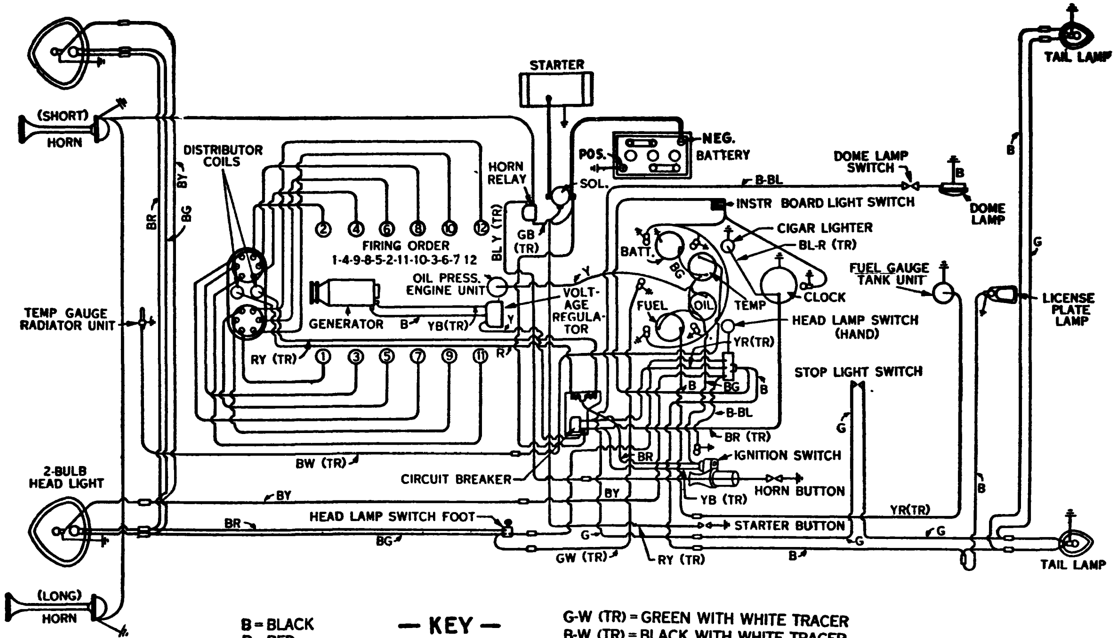
Clutch Long **Facings** Woven 9″ x 12″ x .137″ 2 Required

Gear Ratio 55-12 **Type** Spiral Gears

Axle Full-Floating

Brakes Bendix Mechanical
- **Front** 33½″ x 2½″ x ¼″ **Clearance**
- **Rear** 33½″ x 2½″ x ¼″ **Clearance**
- **Hand** 4 Wheels

Lining Woven and Moulded



— KEY —

B = BLACK	G-W (TR) = GREEN WITH WHITE TRACER
R = RED	B-W (TR) = BLACK WITH WHITE TRACER
Y = YELLOW	R-Y (TR) = RED WITH YELLOW TRACER
G = GREEN	BL-Y (TR) = BLUE WITH YELLOW TRACER
BG = BLACK AND GREEN	BL-R (TR) = BLUE WITH RED TRACER
BR = BLACK AND RED	Y-B (TR) = YELLOW WITH BLACK TRACER
BY = BLACK AND YELLOW	B-BL = BLACK AND BLUE
G-B (TR) = GREEN WITH BLACK TRACER	Y-R (TR) = YELLOW WITH RED TRACER

LINCOLN-ZEPHYR WIRING DIAGRAM, 1939

Courtesy of Ford Motor Company

Lincoln-Zephyr **Model** **Year 1939** **Series**

Battery Ford **Type** 17-Plate **Volts** 6 **Amps.** 100
Frame Connection Positive

Lighting **Head Lights** C.P. 32-32, Volts 6
Dash, Tail and Stop C.P. 1½, C.P. 3, C.P. 21, Volts 6-8
Parking Lights C.P. 1½, Volts 6-8

Starter and Generator Ford, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 26 Amps. **Speed** Car 30 M.P.H.
Regulation Voltage **Cut-in** 7 Volts Car Speed 10 M.P.H.

Ignition Own **Contact Breaker Gap** .014″-.016″
Spark Plug—Size 14 M.M. **Gap** .028″-.030″
Firing Order 1-4-9-8-5-2-11-10-3-6-7-12
Timing 4° B.T.C.

Engine **Bore** 2.75″ **Stroke** 3.75″ **Taxable H.P.** 36.39
Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″
Diam. 2.75″ **Gap** .008″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 19¼° B.T.C. **Close** 54½° A.B.C.
Intake Clearance Hydraulic
Exhaust Timing—Open 57½° B.B.C. **Close** 6½° A.T.C.
Exhaust Clearance Hydraulic

Carburetor Stromberg

Cooling System Pump **Type** Centrifugal **Capacity** 30 Qts.

Steering **Camber** ¾° **Caster** 4° **Toe-In** 3/16″

Clutch Long **Facings** Moulded 6″ x 10″ x .140″ 2 Required

Gear Ratio 40-9 **Type** Hypoid

Axle ¾-Floating

Brakes Bendix Hydraulic
Front 23⅞″ x 1¾″ x 7/32″ **Clearance** .010″
Rear 23⅞″ x 1¾″ x 7/32″ **Clearance** .010″
Hand Rear Service
Lining Moulded and Woven

Oldsmobile **Model 6-Cylinder** **Year 1939** **Series F-39-60**

Battery Delco **Type** 15E1-W **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Head Lights** Mazda 2320, C.P. 21-32, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1½, 1154 C.P. 3-21, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 24-28 Amps. **Speed** 3600 R.P.M.
Regulation Voltage & 3rd **Cut-in** 6.4 Volts, 825 R.P.M.

Ignition Delco **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .040″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3⁷⁄₁₆″ **Stroke** 3⅞″ **Taxable H.P.** 28.4
Piston Ring—Width Oil 2—.1865″, Comp., 2—.0935″
Diam. 3⁷⁄₁₆″ **Gap** Oil .007″-.015″ Comp., .007″-.012″
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 30° A.B.C.
Intake Clearance .008″ Warm
Exhaust Timing—Open 50° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .011″ Warm

Carburetor Carter 425-S

Cooling System Pump **Type** Centrifugal **Capacity** 17 Qts.

Steering **Camber** +⅛° to 1° **Caster** —¾° to 0° **Toe-In** ⅛″ to ³⁄₁₆″

Clutch Borg **Facings** Moulded and Woven 6¼″ x 9″ x .125″ 2 Required

Gear Ratio 43-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 2⁵⁄₁₆″ x 1¾″ x ³⁄₁₆″ **Clearance** .010″
- **Rear** 2⁵⁄₁₆″ x 1¾″ x ³⁄₁₆″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded

Oldsmobile **Model 6-Cylinder** **Year 1939** **Series G-39-70**

Battery Delco **Type** 15E1-W **Volts** 6 **Amps.** 100

Frame Connection Negative

Lighting **Head Lights** Mazda 2320, C.P. 21-32, Volts 6-8

Dash, Tail and Stop Mazda 55 C.P. 1½, 1154 C.P. 3-21, Volts 6-8

Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 24-28 Amps. **Speed** 3600 R.P.M.

Regulation Volt., & 3rd **Cut-in** 6.4 Volts, 825 R.P.M.

Relay Air Gap **Contact Gap**

Ignition Delco **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .040″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** 3 7/16″ **Stroke** 4⅛″ **Taxable H.P.** 28.4

Piston Ring—Width Oil 2—.1865″, Comp., 2—.0935″

Diam. 3 7/16″ **Gap** Oil .007″-.015″ Comp., .007″-.012″

Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 45° A.B.C.

Intake Clearance .008″ Warm

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .011″ Warm

Carburetor Carter 426-S

Cooling System Pump **Type** Centrifugal **Capacity** 17 Qts.

Steering **Camber** +⅛° to 1° **Caster** —¾° to 0° **Toe-In** ⅛″ to 3/16″

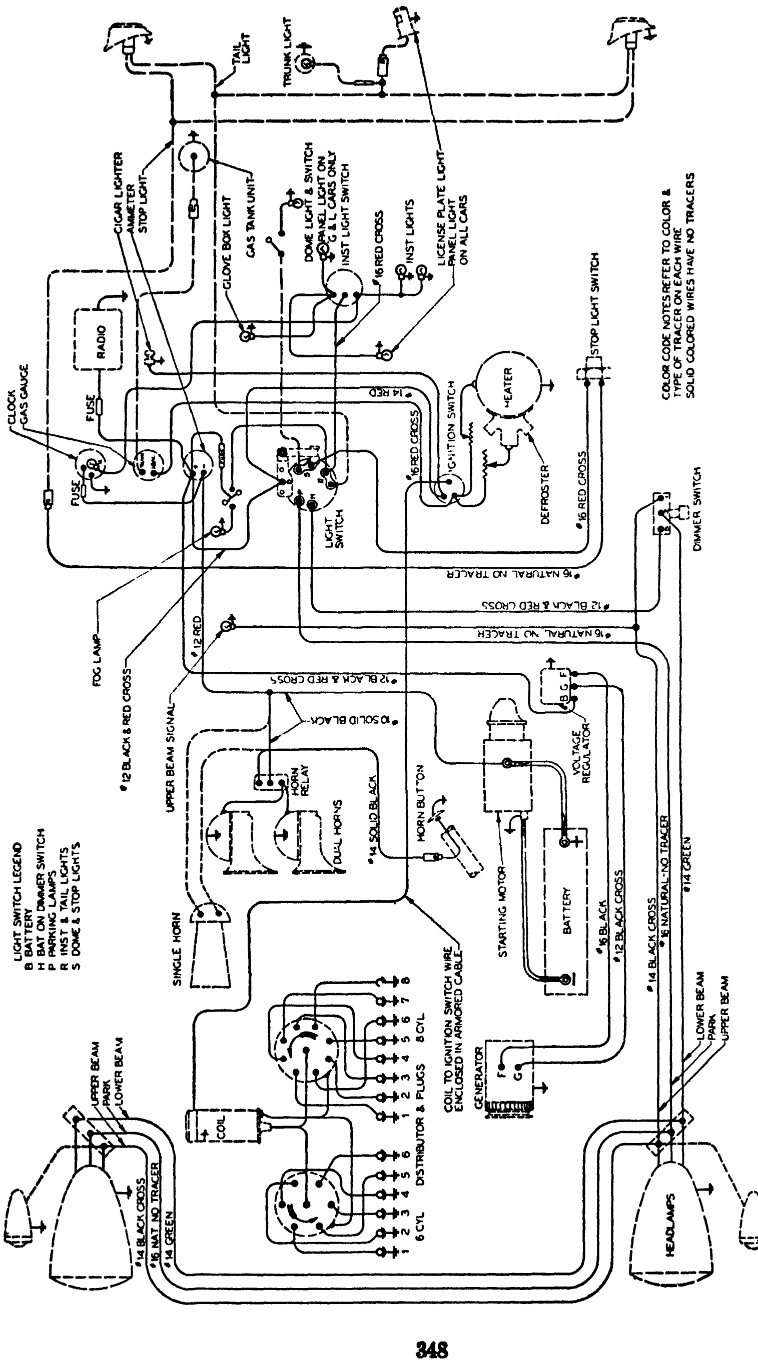
Clutch Borg **Facings** Moulded and Woven 6″ x 9¼″ x .125″

Gear Ratio 43-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 21 5/16″ x 1¾″ x 3/16″ **Clearance** .010″
- **Rear** 21 5/16″ x 1¾″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded



OLDSMOBILE WIRING DIAGRAM, 1939, 6- AND 8-CYLINDER MODELS

Courtesy of Olds Motor Works

Oldsmobile Model 8-Cylinder Year 1939 Series L-39-80

Battery Delco **Type** 17E1-W **Volts** 6 **Amps.** 115
Frame Connection Negative

Lighting **Head Lights** Mazda 2320, C.P. 21-32, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1½, 1154 C.P. 3-21, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 24-28 Amps. **Speed** 2600 R.P.M.
Regulation Voltage & 3rd **Cut-in** 6.4 Volts, 825 R.P.M.
Relay Air Gap **Contact Gap**

Ignition Delco **Contact Breaker Gap** .015″
Spark Plug—Size 14 M.M. **Gap** .030″
Firing Order 1-6-2-5-8-3-7-4
Timing 2° B.T.C.

Engine **Bore** 3¼″ **Stroke** 3⅞″ **Taxable H.P.** 33.8
Piston Ring—Width Oil 2—.1865″; Comp., 2—.0925″
Diam. 3¼″ **Gap** Oil .009″-.014″; Comp., .009″-.014″
Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 35° A.B.C.
Intake Clearance .008″ Warm
Exhaust Timing—Open 45° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .011″ Warm

Carburetor Carter 389-S

Cooling System Pump **Type** Centrifugal **Capacity** 24 Qts.

Steering **Camber** +⅛° to 1° **Caster** —¾° to 0° **Toe-In** ⅛″ to 3/16″

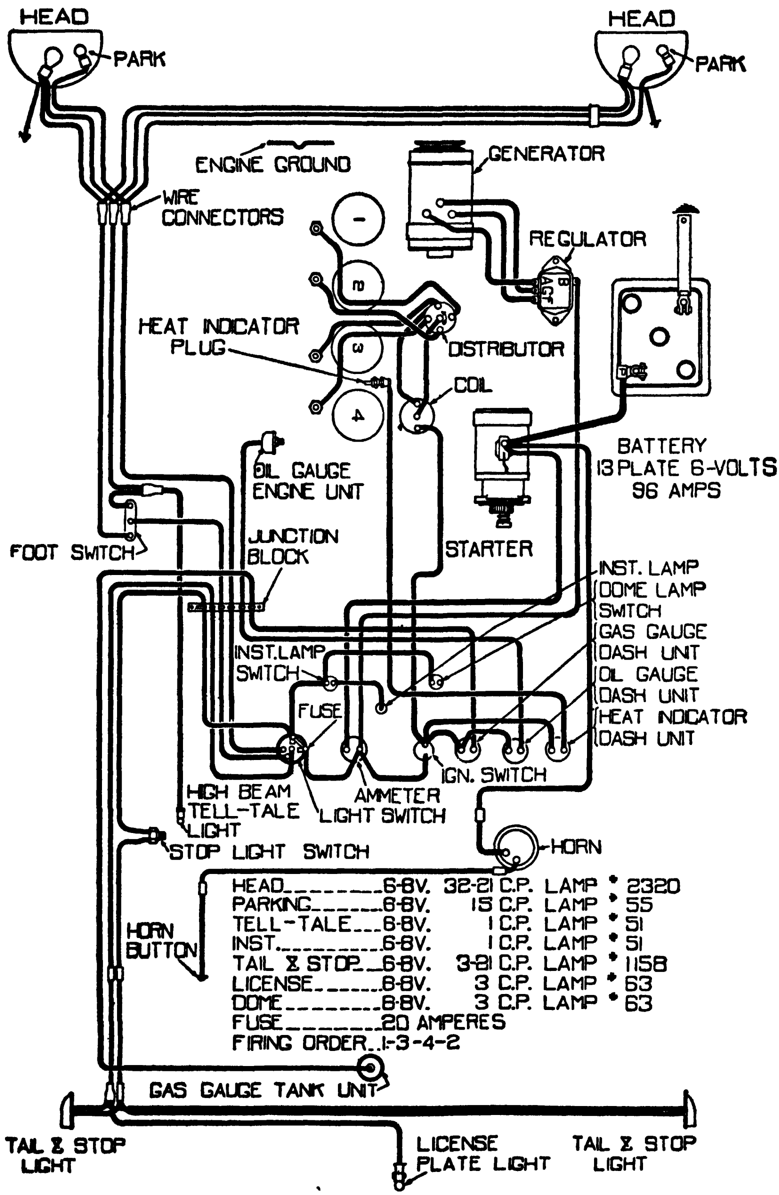
Clutch Borg **Facings** Moulded & Woven, 7″ x 10″ x .125″ 2 Required

Gear Ratio 43-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 23 1/16″ x 1¾″ x 3/16″ **Clearance** .010″
- **Rear** 23 1/16″ x 1¾″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded Primary; Woven Secondary



OVERLAND WIRING DIAGRAM, 1939, MODEL 39

Courtesy of Willys-Overland Company

Overland **Model 39** **Year 1939** **Series**

Battery U.S.L. **Type** 13-Plate **Volts** 6 **Amps.** 78
Frame Connection Negative

Lighting **Head Lights** Mazda 2320, C.P. 32-21, Volts 6-8
Dash, Tail and Stop Mazda 51, C.P. 1, Volts 6-8; 1158, C.P. 3-21, Volts 6-8
Parking Lights Mazda 55, C.P. 1.5, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 14 Amps. **Speed** 2000 R.P.M.
Regulation 3rd Brush **Cut-in** 7 Volts, 720 R.P.M.

Ignition Auto-Lite **Contact Breaker Gap** .022″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-3-4-2
Timing T.D.C.

Engine **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 15.6
Piston Ring—Width Oil 1—3/16″ Comp., 3—3/32″
Diam. 3⅛″ **Gap** .008″ on all.
Oiling—Type Pump, Gear **Capacity** 4 Qts.

Valves **Intake Timing—Open** 9° B.T.C. **Close** 50° A.B.C.
Intake Clearance .014″ Cold
Exhaust Timing—Open 47° B.B.C. **Close** 12° A.T.C.
Exhaust Clearance .016″ Cold

Carburetor Tillotson U.I.B.

Cooling System Pump **Type** Centrifugal **Capacity** 11¾ Qts.

Steering **Camber** 2° **Caster** 3° **Toe-In** 3/32″

Clutch Borg **Facings** Moulded 5⅛″ x 7⅞″ x ⅛″ 2 Required

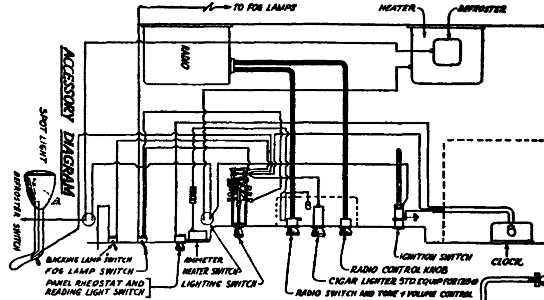
Gear Ratio 43-10 **Type** Spiral Gears

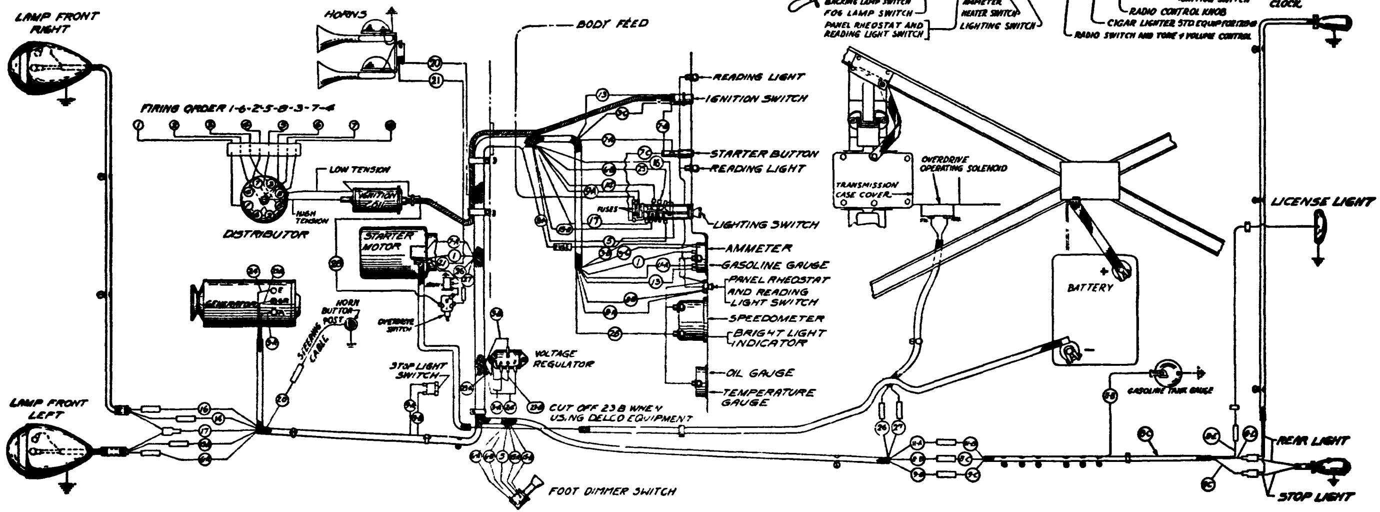
Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 18 15/16″ x 1¾″ x 3/16″ **Clearance Toe** .010″ **Heel** .006″
- **Rear** 18 15/16″ x 1¾″ x 3/16″ **Clearance Toe** .010″ **Heel** .006″
- **Hand** 4 Wheels

Lining Moulded Primary, Woven Secondary

NO	GA	COLOR	LOCATION	NO	GA	COLOR	LOCATION
1	10	RED	FROM STARTER MOTOR SWITCH TO AMMETER	13	16	BLACK	FROM IGNITION SWITCH TO GASOLINE GAUGE
3A	10	RED	FROM CURRENT REGULATOR TO GENERATOR	14	14	RED	FROM LIGHTING SW. TO LAMP FRONT RT (CITY)
3B	10	BLACK	FROM CURRENT REGULATOR TO AMMETER	15A	14	WHITE	FROM DIMMER SW TO LAMP FRONT LT ([illegible])
3C	12	BLACK	FROM IGNITION SWITCH TO AMMETER	15B	14	WHITE	FROM DIMMER SWITCH TO LIGHTING SWITCH
5	14	BLACK	FROM LIGHTING SWITCH TO DIMMER SWITCH	16	14	GREEN	FROM LIGHTING SW TO LAMP FRONT RT. ([illegible])
6A	14	YELLOW	FROM DIMMER SWITCH TO LAMP F.T. C.T. ([illegible])	17	16	BLACK WITH RED TRAC.	FROM LIGHTG. SW TO LAMP F.T. R'T & L'T (PARKING)
6B	14	YELLOW	FROM DIMMER SWITCH TO LIGHTING SWITCH	20	16	BLACK WITH GREEN TRACER	FROM STEERING POST HORN BUTN TO HORN RELAY
7A	16	BLACK	FROM STARTER BUTN. TO STARTER MTR SW	21	12	BLACK	FROM STARTER MOTOR SW. TO HORN RELAY
7B	12	BLACK	FROM STARTER BUTN TO IGNITION SWITCH	23A	14	GREEN	FROM VOLTAGE REGULATOR TO GENERATOR
7C	12	BLACK	FROM STARTER BUTN. TO LIGHTING SWITCH	24	18	BROWN	FROM VOLTAGE REGULATOR TO GENERATOR
8A	16	BLACK	FROM PANEL RHEOSTAT TO TAIL LAMP FUSE	25	18	WHITE	FROM LIGHTING SW TO SPEEDOM BRIGHT LIGHT IND
8B	16	BLACK	FROM PANEL RHEOSTAT TO R'R HARNESS J'N.	26	12	BLACK	FROM OVERDRIVE OPERATING SOLENOID TO OVERDRIVE SWITCH (5)
[illegible]	16	BLACK	FROM R'R. HARNESS J'N. TO REAR LAMPS	27	16	BLACK WITH RED TRACER	FROM OVERDRIVE OPERATING SOLENOID TO OVERDRIVE SWITCH (1)
9A	16	GREEN	FROM FUSE AT LIGHTG. SW TO STOP LIGHT SW	28	16	GREEN	FROM OVERDRIVE SWITCH TO COIL
9B	16	GREEN	FROM R'R HARNESS J'N TO STOP LIGHT SW				
9C	16	GREEN	FROM R'R HARNESS J'N TO STOP LIGHT				
11A	18	TAN WITH RED AND BLACK TRACER	FROM R'R HARNESS J'N TO GAS GAUGE				
11B	18	TAN WITH RED AND BLACK TRACER	FROM R'R HARNESS J'N TO GAS TANK GAUGE				





PACKARD WIRING DIAGRAM, 1939, 8-CYLINDER MODEL

Courtesy of Packard Motor Car Company

Packard **Model 8-Cylinder** **Year 1939** **Series**

Battery Prest-O-Lite **Type** 17-Plate **Volts** 6 **Amps.** 114

Frame Connection Positive

Lighting **Head Lights** Mazda 2330-L, C.P. 32-32, Volts 6-8

Dash, Tail and Stop Mazda 55 C.P. 1½, 1158 C.P. 3-21, Volts 6-8

Parking Lights Mazda 55, C.P. 1½ Volts

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator **Max. Chg. Rate** 25.5 Amps. **Speed** 3600 R.P.M.

Regulation Voltage, 3rd **Cut-in** 7.0 Volts, 800 R.P.M.

Ignition Auto-Lite **Contact Breaker Gap** .015″

Spark Plug—Size 10 M.M. **Gap** .028″

Firing Order 1-6-2-5-8-3-7-4

Timing 8°-9½° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4¼″ **Taxable H.P.** 33.8

Piston Ring—Width Oil 1—3/16″; Comp., 2—⅛″

Diam. 3¼″ **Gap** .007″ on all

Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 39° A.B.C.

Intake Clearance .007″ Warm

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .010″ Warm

Carburetor Stromberg

Cooling System Pump **Type** Centrifugal **Capacity** 16 Qts.

Steering **Camber** ½° to ¾° to 0° **Caster** 1½° **Toe-In** 1/32″ to 1/16″

Clutch Long **Facings** Woven, 6″ x 10″ x ⅛″ 2 Required

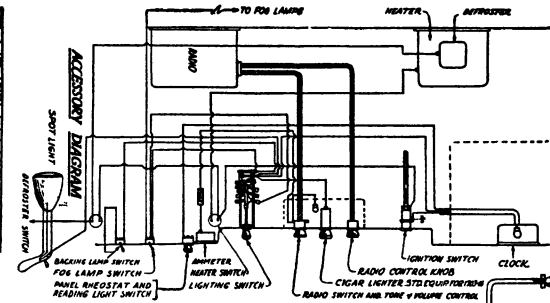
Gear Ratio 48-11 **Type** Hypoid

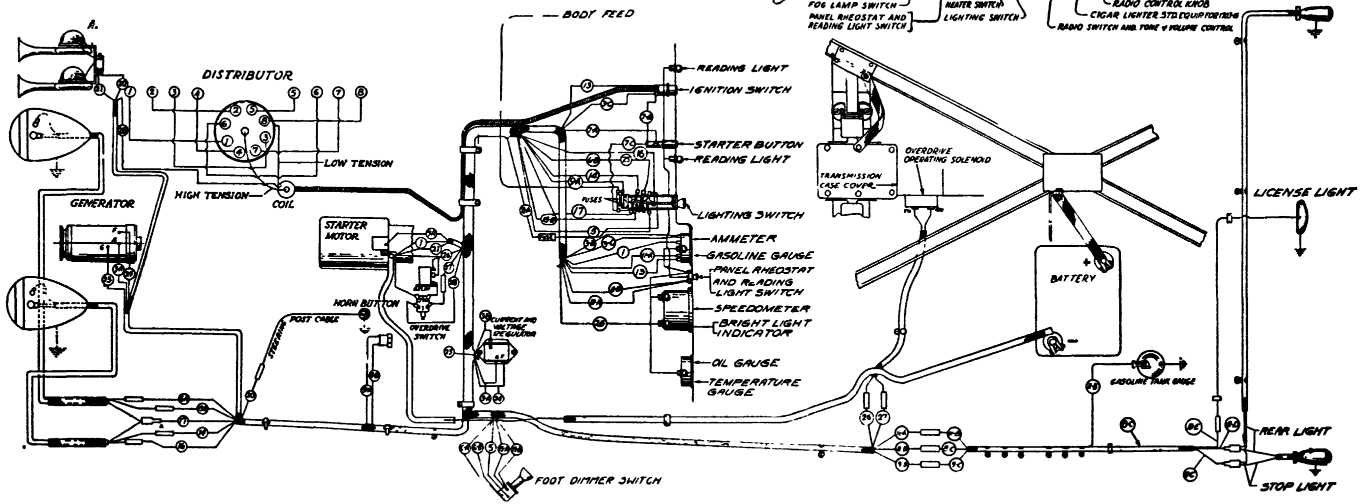
Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 26″ x 1¾″ x 3/16″ **Clearance** .010″
- **Rear** 26″ x 1¾″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining

NO	GA	COLOR	LOCATION	NO	GA	COLOR	LOCATION
1	10	RED	FROM STARTER MOTOR SWITCH TO AMMETER	13	16	BLACK	FROM IGNITION SWITCH TO GASOLINE GAUGE
3A	10	RED	FROM CURRENT REGULATOR TO GENERATOR	14	14	RED	FROM LIGHTING SW. TO LAMP FRONT L'T (CITY)
3B	10	BLACK	FROM CURRENT REGULATOR TO AMMETER	15A	14	WHITE	FROM DIMMER SW TO LAMP FRONT L'T (CITY AND PASSING)
3C	12	BLACK	FROM IGNITION SWITCH TO AMMETER	15B	14	WHITE	FROM DIMMER SWITCH TO LIGHTING SWITCH
5	14	BLACK	FROM LIGHTING SWITCH TO DIMMER SWITCH	16	14	GREEN	FROM LIGHTING SW TO LAMP FRONT L'T (DRIVING & PASSING)
6A	14	YELLOW	FROM DIMMER SWITCH TO LAMP F'T L'T (Driving)	17	16	BLACK WITH RED TRAC.	FROM LIGHT'G. SW TO LAMP F'T R'T & L'T (PARKING)
6B	14	YELLOW	FROM DIMMER SWITCH TO LIGHTING SWITCH	20	16	BLACK WITH GREEN TRACER	FROM STEERING POST HORN BUT'N TO HORN RELAY
7A	16	BLACK	FROM STARTER BUT'N TO STARTER MTR SW	21	12	BLACK	FROM STARTER MOTOR SW. TO HORN RELAY
7B	12	BLACK	FROM STARTER BUT'N TO IGNITION SWITCH	23A	14	GREEN	FROM VOLTAGE REGULATOR TO GENERATOR
7C	12	BLACK	FROM STARTER BUT'N. TO LIGHTING SWITCH	24	18	BROWN	FROM VOLTAGE REGULATOR TO GENERATOR
8A	16	BLACK	FROM PANEL RHEOSTAT TO TAIL LAMP FUSE	25	18	WHITE	FROM LIGHTING SW TO SPEEDOM BRIGHT LIGHT IND.
8B	16	BLACK	FROM PANEL RHEOSTAT TO R'R HARNESS J'N.	26	12	BLACK	FROM OVERDRIVE OPERATING SOLENOID TO OVERDRIVE SWITCH (5)
[illegible]	16	BLACK	FROM R'R HARNESS J'N. TO REAR LAMPS	27	16	BLACK WITH RED TRACER	FROM OVERDRIVE OPERATING SOLENOID TO OVERDRIVE SWITCH (1)
9A	16	GREEN	FROM FUSE AT LIGHT'G. SW TO STOP LIGHT SW	28	16	GREEN	FROM OVERDRIVE SWITCH TO COIL
9B	16	GREEN	FROM R'R HARNESS J'N. TO STOP LIGHT SW				
9C	16	GREEN	FROM R'R HARNESS J'N. TO STOP LIGHT				
11A	18	TAN WITH RED AND BLACK TRACER	FROM R'R HARNESS J'N TO GAS GAUGE				
11B	18	TAN WITH RED AND BLACK TRACER	FROM R'R HARNESS J'N TO GAS TANK GAUGE				





PACKARD WIRING DIAGRAM, 1939, SUPER 8-CYLINDER MODEL

Courtesy of Packard Motor Car Company

Packard **Model** Super 8-Cylinder **Year** 1939 **Series**

Battery **Type** 17-Plate **Volts** 6 **Amps.** 114
Frame Connection Positive

Lighting **Head Lights** Mazda 2330-L. C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 55 C.P. 1½, 1158 C.P. 3-21, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator **Max. Chg. Rate** 28 Amps. **Speed** 2200 R.P.M.
Regulation Voltage & 3rd **Cut-in** 7 Volts, 820 R.P.M.

Ignition Auto-Lite **Contact Breaker Gap** .015″
Spark Plug—Size 10 M.M. **Gap** .028″
Firing Order 1-6-2-5-8-3-7-4
Timing 7° to 8½° B.T.C.

Engine **Bore** 3³⁄₁₆″ **Stroke** 5″ **Taxable H.P.** 32.50
Piston Ring—Width Oil 2—⁵⁄₃₂″; Comp., 2—⅛″
Diam. 3³⁄₁₆″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 7½ Qts.

Valves **Intake Timing—Open** 26° B.T.C. **Close** 69° A.B.C.
Intake Clearance .006″ Warm
Exhaust Timing—Open 61° B.B.C. **Close** 34° A.T.C.
Exhaust Clearance .008″ Warm

Carburetor Stromberg

Cooling System Pump **Type** Centrifugal **Capacity** 22 Qts.

Steering **Camber** 1° ± ¼° **Caster** ½° ± ½° **Toe-In** ¹⁄₃₂″ to ¹⁄₁₆″

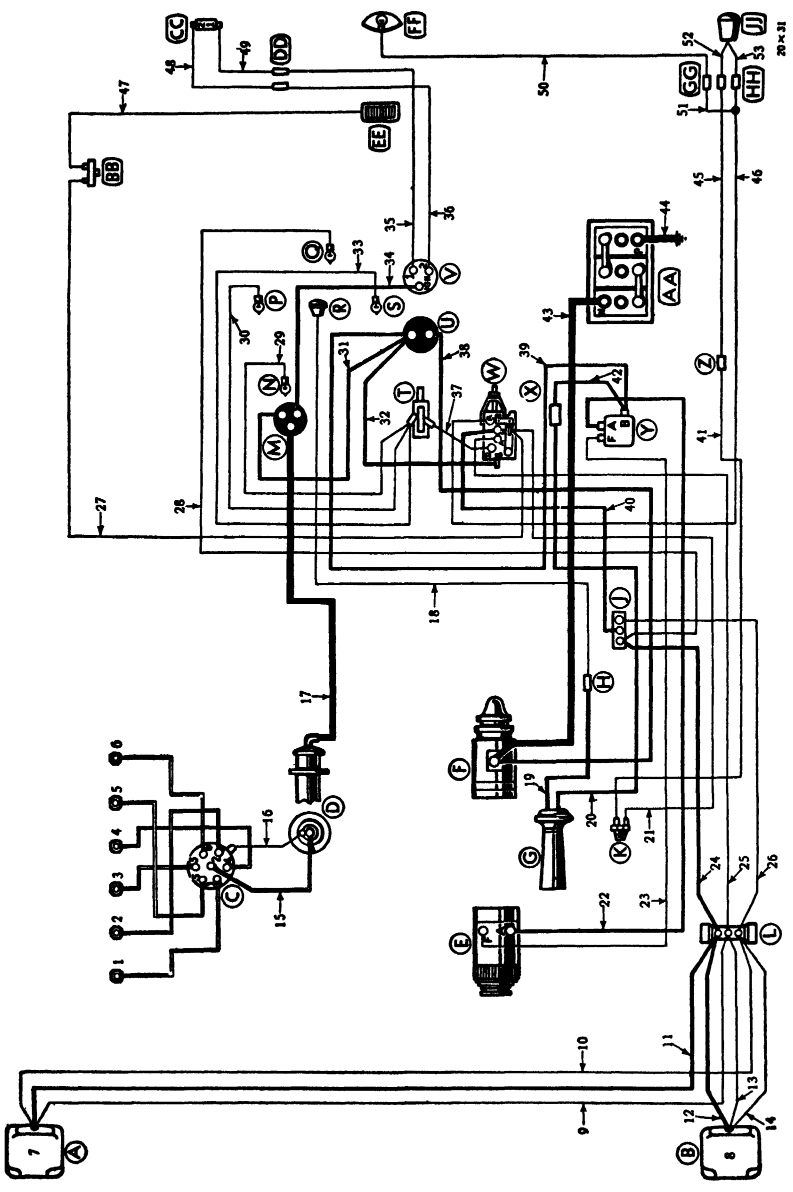
Clutch Long **Facings** Woven 6½″ x 11″ x ⅛″ 2 Required

Gear Ratio 48-11 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 26″ x 2¼″ x ³⁄₁₆″ **Clearance** .010″
- **Rear** 26″ x 2¼″ x ³⁄₁₆″ **Clearance** .010″
- **Hand** Rear Service

Lining



PLYMOUTH WIRING DIAGRAM, 1939, 6-CYLINDER MODEL
Courtesy of Chrysler Corporation

Plymouth **Model 6-Cylinder** **Year 1939** **Series**

Battery Willard **Type** 13-Plate **Volts** 6 **Amps.** 90
Frame Connection Positive

Lighting **Head Lights** Mazda 2331, C.P. 32-32. Volts 6-8
Dash, Tail and Stop Mazda 55, C.P. 1½, Volts 6-8; 1158. C. P. 21-3, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 16 Amps. **Speed** 2600 R.P.M.
Regulation 3rd Brush **Cut-in** 7 Volts, 800 R.P.M.

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 23.44
Piston Ring—Width Oil 2—5/32″; Comp. 2—⅛″
Diam. 3⅛″ **Gap** .007″ on all
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter Ball and Ball D6-A-1

Cooling System Centrifugal **Type** Pump **Capacity** 14 Qts.

Steering **Camber** ¼° to +½° **Caster** ½° to +1½° **Toe-In** 1/16″

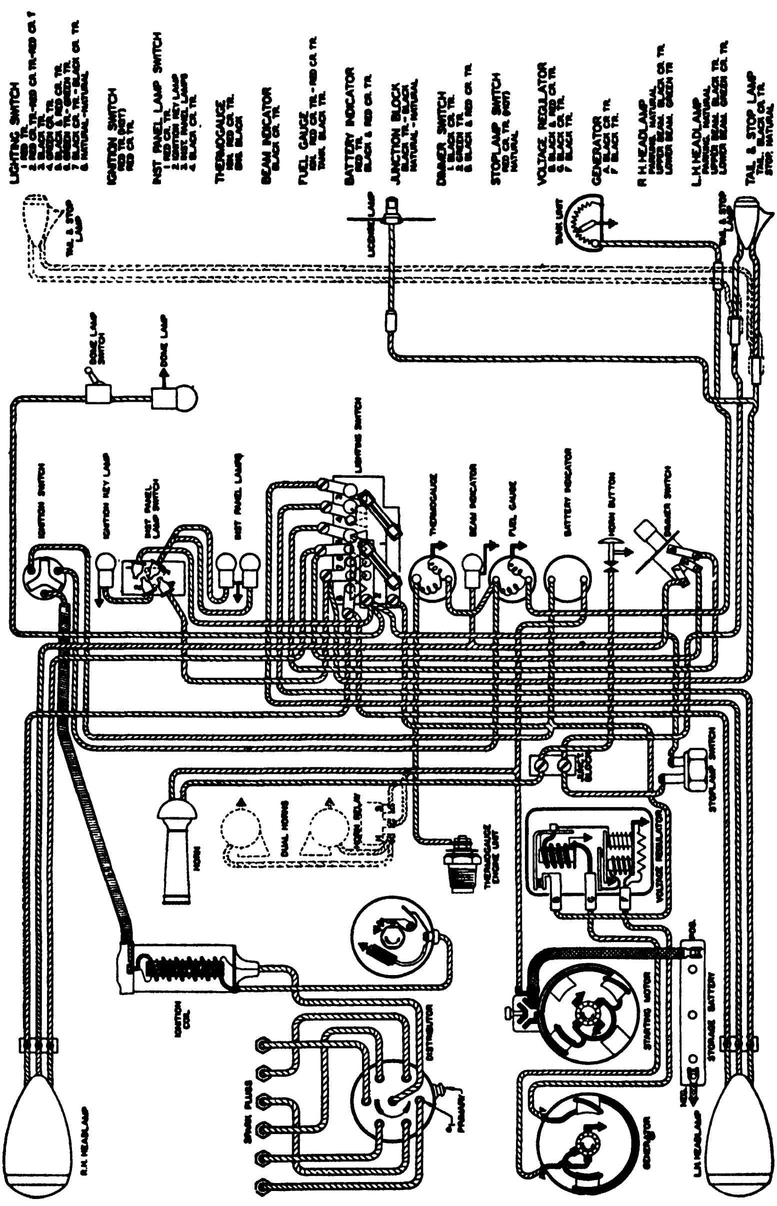
Clutch Borg **Facings** Woven 5⅝″ x 9¼″ x .133″ 2 Required

Gear Ratio 39-10, 41-10 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 18″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Rear** 18″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Hand** 17 1/16″ x 2″ x 5/32″ Trans.. **Clearance** .025″

Lining Moulded



PONTIAC WIRING DIAGRAM, 1939, 6-CYLINDER MODEL
Courtesy of Pontiac Motor Company

Pontiac **Model 6-Cylinder** **Year 1939** **Series**

Battery Delco **Type** 15E1-W **Volts** 6 **Amps.** 100

Frame Connection Negative

Lighting **Head Lights** Mazda 2320-L, C.P. 21-32, Volts 6-8

Dash, Tail and Stop Mazda 55 C.P. 1½, 1154 C.P. 15, Volts 6-8

Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 25-28 Amps. **Speed** 3600 R.P.M.

Regulation Volt. 3rd Brush **Cut-in** 7.5-7.85 Volts

Relay Air Gap .063″ **Contact Gap** .020″

Ignition **Contact Breaker Gap** .020″

Spark Plug—Size AC 45, 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 2° B.T.C.

Engine **Bore** 3 7/16″ **Stroke** 4″ **Taxable H.P.** 28.3

Piston Ring—Width Oil 1—3/16″; Comp. 2—3/32″

Diam. 3 7/16″ **Gap** .009″-.014″

Oiling—Type Gear Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.

Intake Clearance .011″-.013″ Hot

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .011″-.013″ Hot

Carburetor Carter 433S

Cooling System Centrifugal **Type** Pump **Capacity** 16 Qts.

Steering **Camber** −½° to +1° **Caster** 0° to −¾° **Toe-In** 0″ to 1/16″

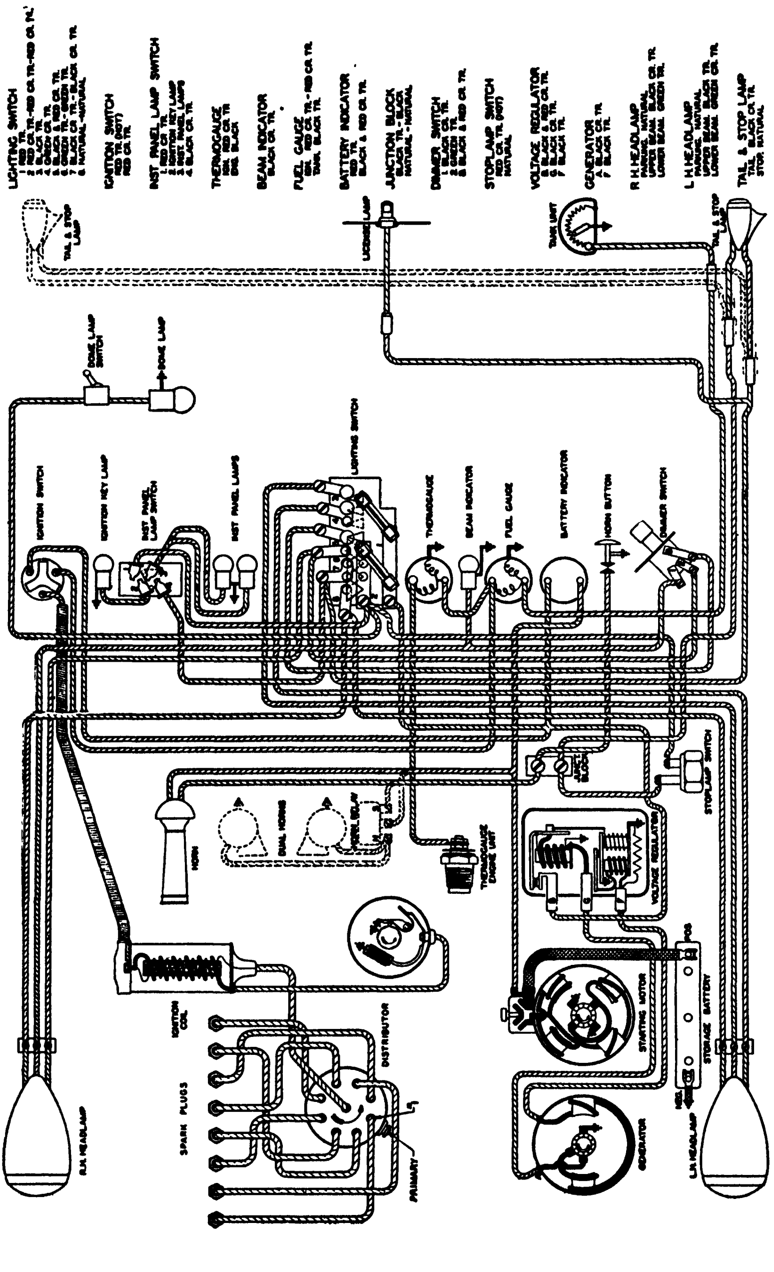
Clutch Inland **Facings** Moulded 9″ x 5¾″ x 3″ 2 Required

Gear Ratio 41-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 21 5/16″ x 1¾″ x 3/16″ **Clearance** .010″
- **Rear** 21 5/16″ x 1¾″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded



PONTIAC WIRING DIAGRAM, 1939, 8-CYLINDER MODEL
Courtesy of Pontiac Motor Company

Pontiac **Model 8-Cylinder** **Year 1939** **Series**

Battery Delco **Type** 15E1-W **Volts** 6 **Amps.** 100

Frame Connection Negative

Lighting **Head Lights** Mazda 2320-L, C.P. 21-32, Volts 6-8

Dash, Tail and Stop Mazda 55 C.P. 1½, 1154 C.P. 15, Volts 6-8

Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Delco-Remy, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 25-28 Amps. **Speed** 3600 R.P.M.

Regulation Volt., 3rd Brush **Cut-in** 7.5-7.85 Volts

Relay Air Gap .063″ **Contact Gap** .020″

Ignition Delco **Contact Breaker Gap** .015″

Spark Plug—Size AC 45, 14 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing 2° B.T.C.

Engine **Bore** 3¼″ **Stroke** 3¾″ **Taxable H.P.** 33.8

Piston Ring—Width Oil 1—3/16″; Comp. 2—3/32″

Diam. 3¼″ **Gap** .009″-.014″

Oiling—Type Gear Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.

Intake Clearance .011″-.013″ Hot

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .011″-.013″

Carburetor Carter 432S

Cooling System Centrifugal **Type** Pump **Capacity** 19 Qts.

Steering **Camber** $-\frac{1}{2}°$ to $+1°$ **Caster** 0° to $-\frac{3}{4}°$ **Toe-In** 0″ to 1/16″

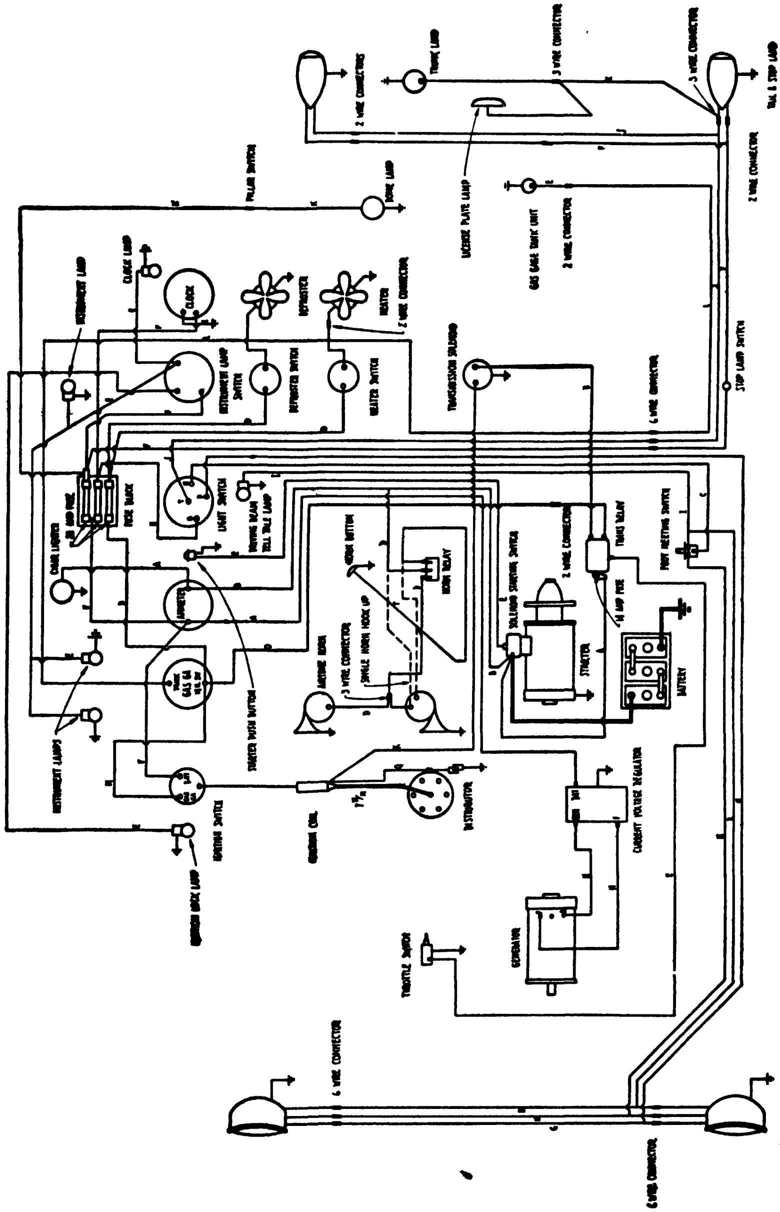
Clutch Inland **Facings** Moulded 9¼″ x 5¾″ x ⅛″ 2 Required

Gear Ratio 43-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 21 5/16″ x 1¾″ x 3/16″ **Clearance** .010″
- **Rear** 21 5/16″ x 1¾″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded



STUDEBAKER WIRING DIAGRAM, 1939, COMMANDER MODEL
Courtesy of Studebaker Corporation

Studebaker Model Commander Year 1939 Series 6-Cyl.

Battery Willard **Type** SW-1-95 **Volts** 6 **Amps.** 95

Frame Connection Positive

Lighting
Head Lights Mazda 2331, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 51-55 C.P. 1 and $1\frac{1}{2}$, 1158 C.P. 2-21, Volts 6-8
Parking Lights Mazda 55, C.P. $1\frac{1}{2}$, Volts 6-8

Starter and Generator Auto-Lite, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 28 Amps. **Speed** 2000 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 6.4 Volts, 900 R.P.M.

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing $\frac{9}{64}$″ B.T.C. on Flywheel Damper

Engine **Bore** $3\frac{5}{16}$″ **Stroke** $4\frac{3}{8}$″ **Taxable H.P.** 26.35
Piston Ring—Width Oil 1—$\frac{3}{16}$″; Comp. 2—$\frac{1}{8}$″
Diam. $3\frac{5}{16}$″ **Gap** .013″-.018″ on all
Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.
Intake Clearance .016″ Cold
Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .016″ Cold

Carburetor Stromberg BXO26

Cooling System Centrifugal **Type** Pump **Capacity** 14.5 Qts.

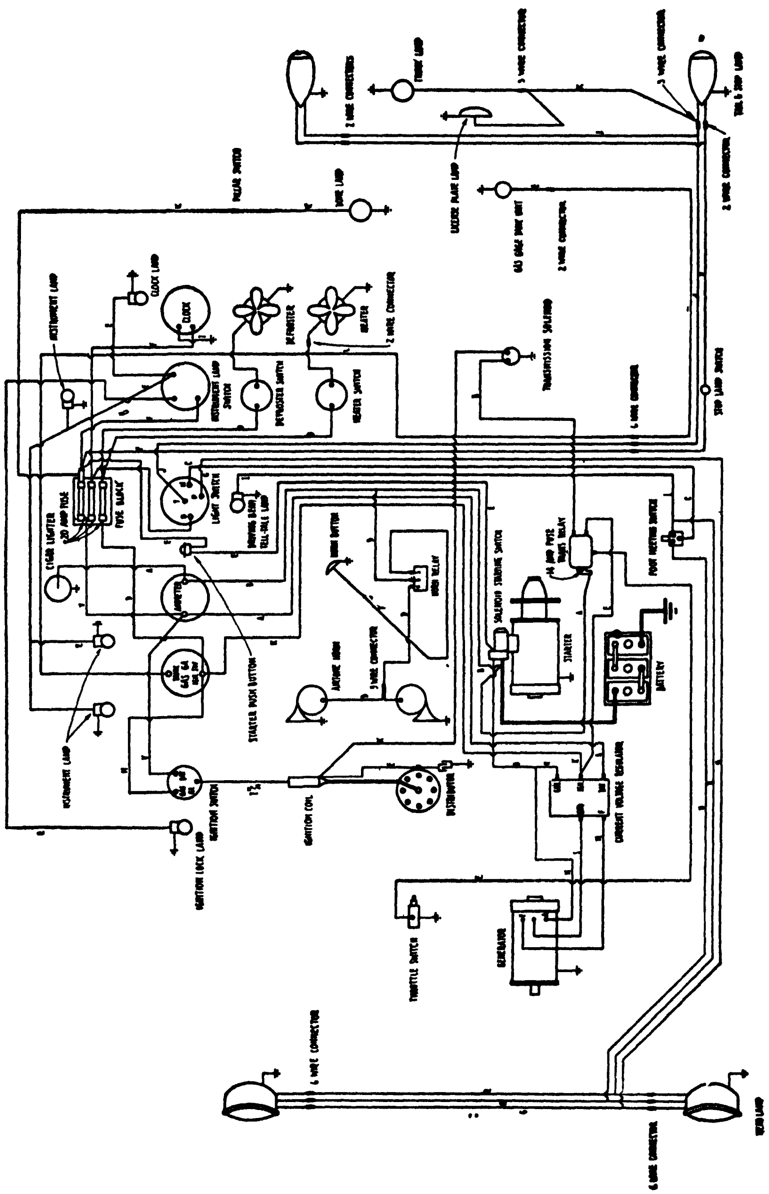
Steering **Camber** $\frac{1}{4}$° to $\frac{3}{4}$° **Caster** $\frac{1}{4}$° to $\frac{3}{4}$° **Toe-In** $\frac{1}{16}$″ to $\frac{1}{8}$″

Clutch Borg **Facings** Composition $5\frac{5}{8}$″ x $9\frac{1}{4}$″ x .137″ 2 Required

Gear Ratio 4.55-1 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front $19\frac{11}{16}$″ x 2″ x $\frac{3}{16}$″ **Clearance Toe** .010″ **Heel** .005″
Rear $19\frac{11}{16}$″ x 2″ x $\frac{3}{16}$″ **Clearance Toe** .010″ **Heel** .005″
Hand Rear Service
Lining Woven and Moulded



STUDEBAKER WIRING DIAGRAM, 1939, PRESIDENT MODEL
Courtesy of Studebaker Corporation

Studebaker **Model** President **Year** 1939 **Series** 8-Cyl.

Battery Willard **Type** SW-1-95 **Volts** 6 **Amps.** 95
Frame Connection Positive

Lighting **Head Lights** Mazda 2331, C.P. 32-32, Volts 6-8
Dash, Tail and Stop Mazda 51-55 C.P. 1 & 1½, 1158 C.P. 2-21, Volts 6-8
Parking Lights Mazda 55, C.P. 1½, Volts 6-8

Starter and Generator Delco, Gen., Belt-driven

Generator Hot **Max. Chg. Rate** 29 Amps. **Speed** 800-850 R.P.M.
Regulation Volt., 3rd Brush **Cut-in** 6.4 Volts, 1650 R.P.M.

Ignition Delco **Contact Breaker Gap** .020″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3 1/16″ **Stroke** 4¼″ **Taxable H.P.** 30
Piston Ring—Width Oil 1—3/16″; Comp. 2—⅛″
Diam. 3 1/16″ **Gap** .013″-.018″ on all
Oiling—Type Pump, Gear **Capacity** 8 Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.
Intake Clearance .016″ Cold
Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .016″ Cold

Carburetor Stromberg AAO161

Cooling System Centrifugal **Type** Pump **Capacity** 17 Qts.

Steering **Camber** ¼° to ¾° **Caster** ¼° to ¾° **Toe-In** 1/16″ to ⅛″

Clutch Inland **Facings** Composition 6″ x 9.5″ x .125″ 2 Required

Gear Ratio 4.82-1 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 19 11/16″ x 2¼″ x 3/16″ **Clearance Toe** .010″ **Heel** .005″
- **Rear** 19 11/16″ x 2¼″ x 3/16″ **Clearance Toe** .010″ **Heel** .005″
- **Hand** Rear Service

Lining Woven and Moulded



FIVE-WAY DRILL PRESS USED IN TURNING OUT FORD V-8 CYLINDER BLOCK
Courtesy of Ford Motor Company

Index
Wiring Diagrams
and
Data Sheets
for
1940 Cars

WIRING DIAGRAMS AND DATA SHEETS

CHART OF ABBREVIATIONS

GENERAL

Amps.—Amperes
V.—Volts
C.P.—Candle Power
R.& L. of Firing Order—Right and left determined from driver's seat
Max. Chg. Rate—Maximum Charging Rate
R.P.M.—Revolutions per Minute
M.P.H.—Miles per Hour
D.C.—Double Contact
MM.—Millimeters
Side Lights—Side or Parking Lights
Air Gap—Contacts Closed
Oil—Oil Ring
Comp.—Compression Ring

IGNITION AND VALVE TIMING

B.T.D.C. or B.T.C.—Before Top Dead Center
B.B.D.C. or B.B.C.—Before Bottom Dead Center
A.B.D.C. or A.B.C.—After Bottom Dead Center
A.T.D.C. or A.T.C.—After Top Dead Center
T.D.C. at Retard—Top Dead Center; Spark Control Retarded
12° past T.D.C.—Piston 12° past T.D.C. Spark Control Retarded
2½" before T.D.C.—Piston 2½", on Flywheel, before T.D.C.
"Ret" at Retard—Marks "Ret" on Flywheel

LUBRICATION SYSTEM

Gals.—Gallons
Qts.—Quarts
Press.—Pressure to Main Bearings
Splash—Pressure Circulating Splash
Splash—Connecting Rod Dips

REAR AXLE

Semi—Semi-Floating
¾ Flt.—Three-quarters Floating
Full Flt.—Full Floating

CLUTCH

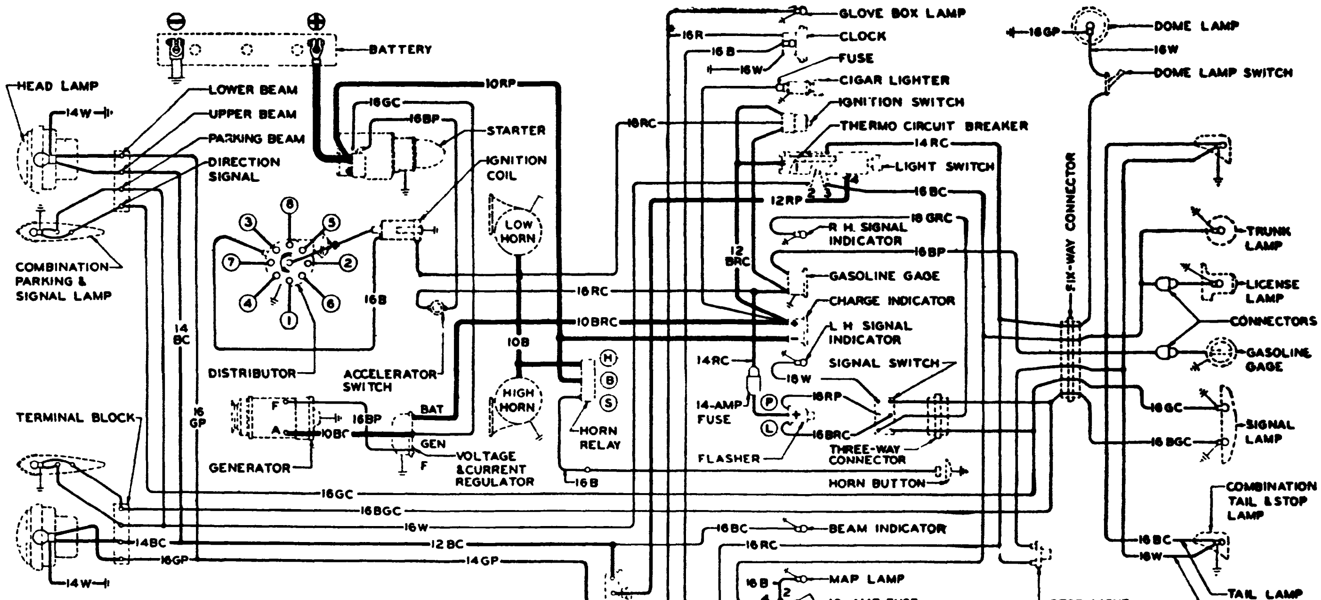
Disc.—Multiple disc, either wet or dry
Plate—Single or Double Plate Type

BRAKES

Front—Front Wheels
Rear—Rear Wheels
Hand—Hand Brake
Trans.—Transmission Brake

INDEX

1940 Wiring Diagrams and Data Sheets



10-B	# 10	BLACK
10-BC	# 10	BLACK CROSSING TRACERS
10-RP	# 10	RED PARALLEL TRACERS
10-BRC	# 10	BLACK AND RED CROSSING TRACERS
12-BRC	# 12	BLACK AND RED CROSSING TRACERS
12-BC	# 12	BLACK CROSSING TRACERS
12-RP	# 12	RED PARALLEL TRACERS
14-BC	# 14	BLACK CROSSING TRACERS
14-GP	# 14	GREEN PARALLEL TRACERS
14-RC	# 14	RED CROSSING TRACERS
14-W	# 14	WHITE
16-BGC	# 16	BLACK AND GREEN CROSSING TRACERS
16-BRC	# 16	BLACK AND RED CROSSING TRACERS
16 W	# 16	WHITE
16-B	# 16	BLACK
16-R	# 16	RED
16-GP	# 16	GREEN PARALLEL TRACERS
16-BC	# 16	BLACK CROSSING TRACERS
16-RC	# 16	RED CROSSING TRACERS
16-GC	# 16	GREEN CROSSING TRACERS
16-BP	# 16	BLACK PARALLEL TRACERS
18-GRC	# 18	GREEN AND RED CROSSING TRACERS
18-RP	# 18	RED PARALLEL TRACERS
18-W	# 18	WHITE

40-50-60

BUICK WIRING DIAGRAM, 1940, SERIES 40-50-60

Courtesy of Buick Motor Company

Buick **Model 8-Cylinder** **Year 1940** **Series 40**

Battery Delco **Type** 17E1-W ***Volts** 6 **Amps.** 115

Frame Connection Negative

Lighting **Head Lights** Sealed Beam 925000 45-35 Watts

Dash, Tail and Stop Volts 6-8, 55 C.P. 15, 1154 C.P. 3-21

Parking Lights Volts 6-8, 1154 C.P. 21-3

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.

Regulation Volt., Current **Cut-in** 6.3 Volts, 8 M.P.H.

Relay Air Gap .018″ to .022″ **Contact Gap** .015″ to .025″

Ignition Delco **Contact Breaker Gap** .015″

Spark Plug—Size 14 M.M. **Gap** .023″ to .028″

Firing Order 1-6-2-5-8-3-7-4

Timing 4° B.T.C. Adv.

Engine **Bore** 3 3/32″ **Stroke** 4 1/8″ **Taxable H.P.** 30.63

Piston Ring—Width Oil 2—3/16″, Comp. 2—3/32″

Diam. 3 3/32″ **Gap** oil .010″, Comp. .010″

Oiling—Type Pump, Gear **Capacity** 6 Qts. Press. 45 Lbs., 35 M.P.H.

Valves **Intake Timing—Open** 13° B.T.C. **Close** 68° A.B.C.

Intake Clearance .015″ Hot

Exhaust Timing—Open 55° B.B.C. **Close** 22° A.T.C.

Exhaust Clearance .015″ Hot

Carburetor Stromberg AAV16

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 1/4 Qts.

Steering **Camber** – 1/4° **Caster** 3/8° **Toe-in** 1/32″

Clutch Own **Facings** Woven, 6 3/4″ x 10″ x 1/8″

Gear Ratio Ring 44, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22 11/16″ x 1 3/4″ x 3/16″ **Clearance** .010″
- **Rear** 22 11/16″ x 1 3/4″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Woven and Moulded

Buick **Model 8-Cylinder** **Year 1940** **Series 50**

Battery Delco **Type** 17E1-W **Volts** 6 **Amps.** 115

Frame Connection Negative

Lighting **Head Lights** Sealed Beam 925000 45-35 Watts

Dash, Tail and Stop Volts 6-8, 55 C.P. 15, 1154 C.P. 3-21

Parking Lights Volts 6-8, 1154 C.P. 21-3

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.

Regulation Volt., Current **Cut-in** 6.3 Volts, 8 M.P.H.

Relay Air Gap .018″ to .022″ **Contact Gap** .015″ to .025″

Ignition Delco **Contact Breaker Gap** .015″

Spark Plug—Size 14 M.M. **Gap** .023″ to .028″

Firing Order 1-6-2-5-8-3-7-4

Timing 4° B.T.C. Adv.

Engine **Bore** $3\frac{3}{32}$″ **Stroke** $4\frac{1}{8}$″ **Taxable H.P.** 30.63

Piston Ring—Width Oil 2—$\frac{3}{16}$″, Comp. 2—$\frac{3}{32}$″

Diam. $3\frac{3}{32}$″ **Gap** Oil .010″, Comp. .010″

Oiling—Type Pump, Gear **Capacity** 6 Qts. Press. 45 Lbs., 35 M.P.H.

Valves **Intake Timing—Open** 13° B.T.C. **Close** 68° A.B.C.

Intake Clearance .015″ Hot

Exhaust Timing—Open 55° B.B.C. **Close** 22° A.T.C.

Exhaust Clearance .015″ Hot

Carburetor Stromberg AAV16

Cooling System Centrifugal **Type** Pump, Belt **Capacity** $13\frac{1}{4}$ Qts.

Steering **Camber** – $\frac{1}{4}$° **Caster** $\frac{3}{8}$° **Toe-in** $\frac{1}{32}$″

Clutch Own **Facings** Woven, $6\frac{3}{4}$″ x 10″ x $\frac{1}{8}$″

Gear Ratio Ring 44, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic

- **Front** $22\frac{11}{16}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″ **Clearance** .010″
- **Rear** $22\frac{11}{16}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″ **Clearance** .010″
- **Hand** Rear Service

Lining Woven and Moulded

Buick **Model 8-Cylinder** **Year 1940** **Series 60**

Battery Delco **Type** 17E1-W **Volts** 6 **Amps.** 115
Frame Connection Negative

Lighting **Head Lights** Sealed Beam 925000 45-35 Watts
Dash, Tail and Stop Volts 6-8, 55 C.P. 15, 1154 C.P. 3-21
Parking Lights Volts 6-8, 1154 C.P. 21-3

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.
Regulation Volt., Current **Cut-in** 6.3 Volts, 8 M.P.H.
Relay Air Gap .018″ to .022″ **Contact Gap** .015″ to .025″

Ignition Delco **Contact Breaker Gap** .015″
Spark Plug—Size 14 M.M. **Gap** .023″ to .028″
Firing Order 1-6-2-5-8-3-7-4
Timing 6° B.T.C. Adv.

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81
Piston Ring—Width Oil 2—3/16″, Comp. 2—3/32″
Diam. 3 7/16″ **Gap** oil .010″, Comp. .010″
Oiling—Type Pump, Gear **Capacity** 8 Qts. Press. 45 Lbs., 35 M.P.H.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Stromberg AAV26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Steering **Camber** – 1/4° **Caster** 3/8° **Toe-in** 1/32″

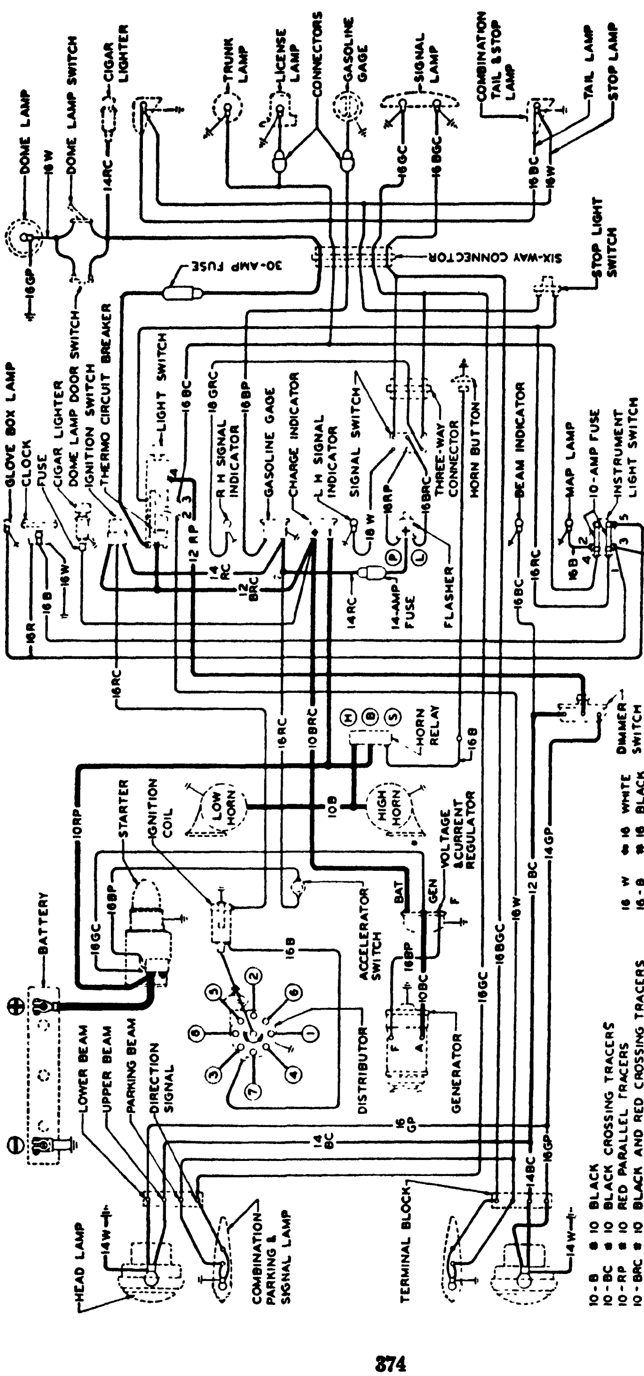
Clutch Borg **Facings** Woven, 6 1/2″ x 10 1/2″ x 1/8″

Gear Ratio Ring 39, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22 15/16″ x 2 1/4″ x 3/16″ **Clearance** .010″
- **Rear** 22 15/16″ x 2 1/4″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Woven and Moulded



10-B	# 10	BLACK
10-BC	# 10	BLACK CROSSING TRACERS
10-RP	# 10	RED PARALLEL TRACERS
10-BRC	# 10	BLACK AND RED CROSSING TRACERS
12-BRC	# 12	BLACK AND RED CROSSING TRACERS
12-BC	# 12	BLACK CROSSING TRACERS
12-RP	# 12	RED PARALLEL TRACERS
14-BC	# 14	BLACK CROSSING TRACERS
14-GP	# 14	GREEN PARALLEL TRACERS
14-RC	# 14	RED CROSSING TRACERS
14-W	# 14	WHITE
16-BGC	# 16	BLACK AND GREEN CROSSING TRACERS
16-BRC	# 16	BLACK AND RED CROSSING TRACERS
16 W	# 16	WHITE
16-B	# 16	BLACK
16-R	# 16	RED
16-GP	# 16	GREEN PARALLEL TRACERS
16-BC	# 16	BLACK CROSSING TRACERS
16-RC	# 16	RED CROSSING TRACERS
16-GC	# 16	GREEN CROSSING TRACERS
16-BP	# 16	BLACK PARALLEL TRACERS
18-GRC	# 18	GREEN AND RED CROSSING TRACERS
18-RP	# 18	RED PARALLEL TRACERS
18-W	# 18	WHITE

70-80-90

BUICK WIRING DIAGRAM, 1940, SERIES 70-80-90

Courtesy of Buick Motor Company

Buick **Model 8-Cylinder** **Year 1940** **Series 70**

Battery Delco **Type** 17E1-W **Volts** 6 **Amps.** 115

Frame Connection Negative

Lighting **Head Lights** Sealed Beam 925000 45-35 Watts

Dash, Tail and Stop Volts 6-8, 55 C.P. 15, 1154 C.P. 3-21

Parking Lights Volts 6-8, 1154 C.P. 21-3

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.

Regulation Volt., Current **Cut-in** 6.3 Volts, 8 M.P.H.

Relay Air Gap .018″ to .022″ **Contact Gap** .015″ to .025″

Ignition Delco **Contact Breaker Gap** .015″

Spark Plug—Size 14 M.M. **Gap** .023″ to .028″

Firing Order 1-6-2-5-8-3-7-4

Timing 6° B.T.C. Adv.

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81

Piston Ring—Width Oil 2—3/16″, Comp. 2—3/32″

Diam. 3 7/16″ **Gap** Oil .010″, Comp. .010″

Oiling—Type Pump, Gear **Capacity** 8 Qts. **Press.** 45 Lbs., 35 M.P.H.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.

Intake Clearance .015″ Hot

Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.

Exhaust Clearance .015″ Hot

Carburetor Stromberg AAV26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Steering **Camber** −1/4° **Caster** 3/8° **Toe-in** 1/32″

Clutch Borg **Facings** Woven, 6 1/2″ x 10 1/2″ x 1/8″

Gear Ratio Ring 39, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22 15/16″ x 2 1/4″ x 3/16″ **Clearance** .010″
- **Rear** 22 15/16″ x 2 1/4″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded and Woven

Buick **Model 8-Cylinder** **Year 1940** **Series 80**

Battery Delco **Type** 17E1-W **Volts** 6 **Amps.** 115
Frame Connection Negative

Lighting **Head Lights** Sealed Beam 925000 45-35 Watts
Dash, Tail and Stop Volts 6-8, 55 C.P. 15, 1154 C.P. 3-21
Parking Lights Volts 6-8, 1154 C.P. 21-3

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.
Regulation Volt., Current **Cut-in** 6.3 Volts, 8 M.P.H.
Relay Air Gap .018″ to .022″ **Contact Gap** .015″ to .025″

Ignition Delco **Contact Breaker Gap** .015″
Spark Plug—Size 14 M.M. **Gap** .023″ to .028″
Firing Order 1-6-2-5-8-3-7-4
Timing 6° B.T.C. Adv.

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81
Piston Ring—Width Oil 2—3/16″, Comp. 2—3/32″
Diam. 3 7/16″ **Gap** Oil .010″, Comp. .010″
Oiling—Type Pump, Gear **Capacity** 8 Qts. Press. 45 Lbs., 35 M.P.H.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Stromberg AAV26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Steering **Camber** – 1/4° **Caster** 0° **Toe-in** 1/32″

Clutch Borg **Facings** Woven, 6 1/2″ x 10 1/2″ x 1/8″

Gear Ratio Ring 46, Pinion 11 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 26 13/16″ x 2″ x 1/4″ **Clearance** .010″
Rear 26 13/16″ x 2″ x 1/4″ **Clearance** .010″
Hand Rear Service
Lining Moulded and Woven

Buick **Model 8-Cylinder** **Year 1940** **Series 90**

Battery Delco **Type** 17E1-W **Volts** 6 **Amps.** 115
Frame Connection Negative

Lighting **Head Lights** Sealed Beam 925000 45-35 Watts
Dash, Tail and Stop Volts 6-8, 55 C.P. 15, 1154 C.P. 3-21
Parking Lights Volts 6-8, 1154 C.P. 21-3

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.
Regulation Volt., Current **Cut-in** 6.3 Volts, 8 M.P.H.
Relay Air Gap .018″ to .022″ **Contact Gap** .015″ to .025″

Ignition Delco **Contact Breaker Gap** .015″
Spark Plug—Size 14 M.M. **Gap** .023″ to .028″
Firing Order 1-6-2-5-8-3-7-4
Timing 6° B.T.C. Adv.

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81
Piston Ring—Width Oil 2—3/16″, Comp. 2—3/32″
Diam. 3 7/16″ **Gap** Oil .010″, Comp. .010″
Oiling—Type Pump, Gear **Capacity** 8 Qts. Press. 45 Lbs., 35 M.P.H.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Stromberg AAV26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Steering **Camber** –1/4° **Caster** 0° **Toe-in** 1/32″

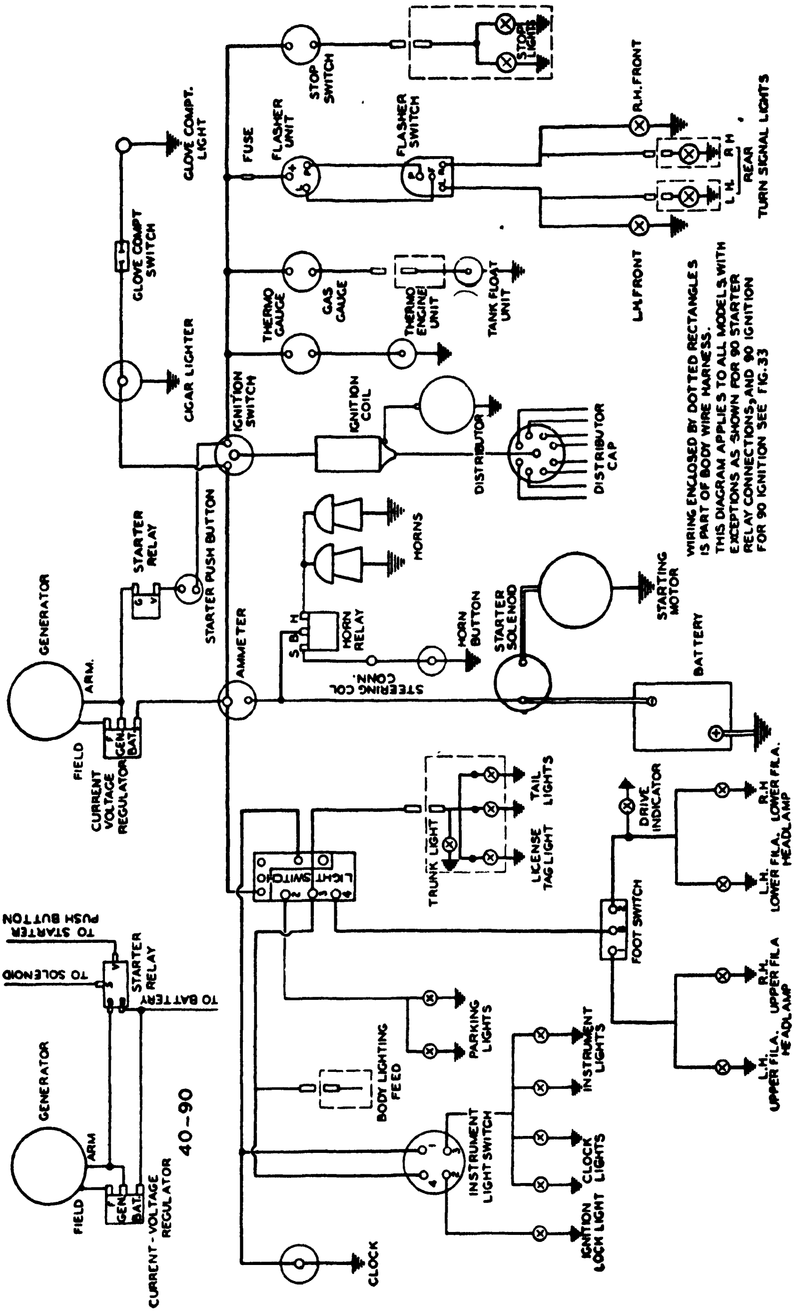
Clutch Borg **Facings** Woven, 6 1/2″ x 10 1/2″ x 1/8″

Gear Ratio Ring 41, Pinion 9 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 26 13/16″ x 2″ x 1/4″ **Clearance** .010″
- **Rear** 26 13/16″ x 2″ x 1/4″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded and Woven



CADILLAC WIRING DIAGRAM, 1940, SERIES 62-60S
Courtesy of Cadillac Motor Car Company

Cadillac **Model V-8-Cylinder** **Year 1940** **Series 62-60S**

Battery Delco **Type** 17 K2W **Volts** 6 **Amps.** 115
Frame Connection Positive

Lighting **Head Lights** Sealed Beam
Dash, Tail and Stop Mazda Volts 6-8; 55 C.P. 1.5, 1154 C.P. 3-21
Parking Lights Mazda Volts 6-8; 1154L, C.P. 21-3

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 32 Amps. **Speed** 2450 R.P.M.
Regulation Volt., Current **Cut-in** 7.5 Volts
Relay Air Gap .010″ to .014″ **Contact Gap** .030″-.045″

Ignition Delco **Contact Breaker Gap** .0125″ to .0175″
Spark Plug—Size 10 M.M. **Gap** .025″ to .030″
Firing Order 1-8-7-3-6-5-4-2
Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 4½″ **Taxable H.P.** 39.20
Piston Ring—Width Oil 2—5/32″, Comp. 1—3/32″, 1—⅛″
Diam. 3½″ **Gap** Oil .007″ to .015″, Comp. .007″ to .012″
Oiling—Type Pump, Gear **Capacity** 7 Qts., 25 Lbs. at 30 M.P.H.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.
Intake Clearance Automatic Take-up
Exhaust Timing—Open 52° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Automatic Take-up

Carburetor Stromberg AAV-26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 24½ Qts.

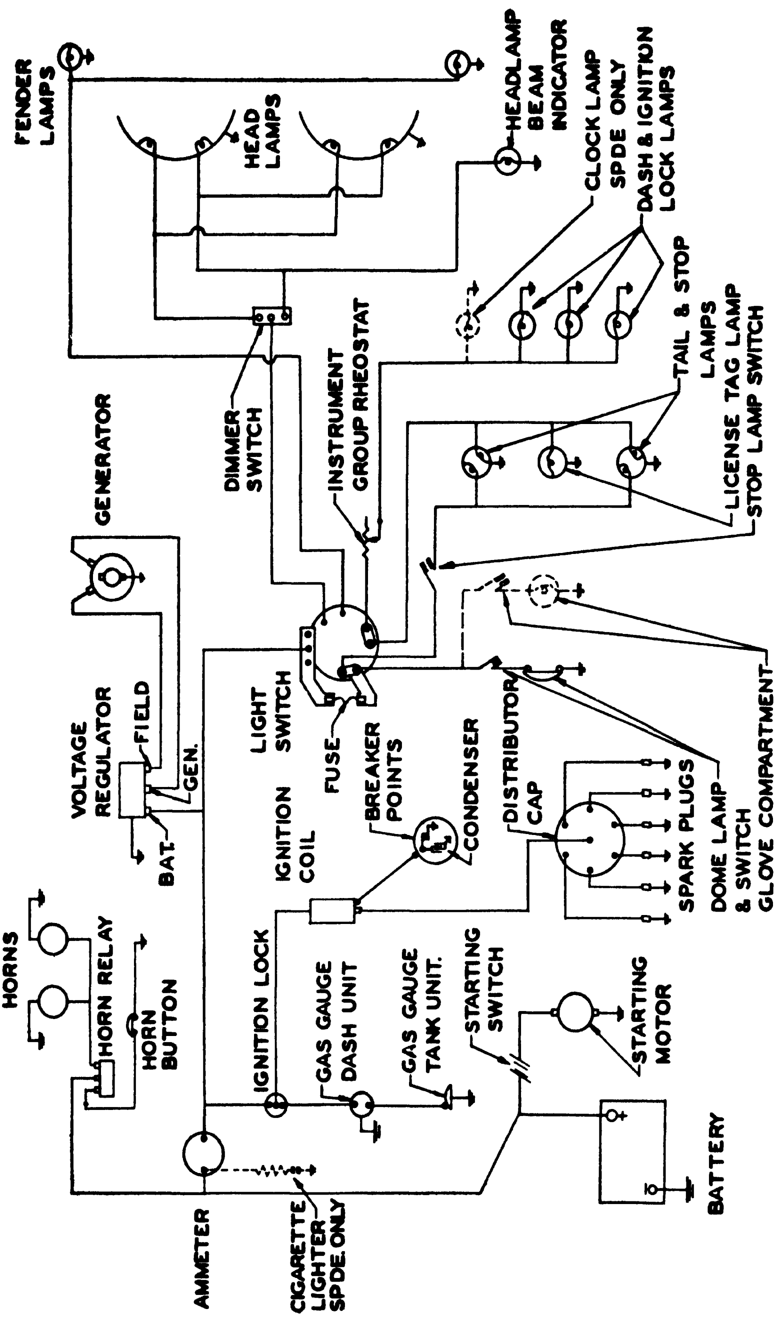
Steering **Camber** 0° to ¾° **Caster** −1¾° to −2¾° **Toe-in** 1/32″ to 3/32″

Clutch Long **Facings** Woven, 7″ x 10½″ x .137″, 2 Required

Gear Ratio Ring 47, Pinion 12 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 24½″ x 2¼″ x 3/16″ **Clearance** .010″
Rear 24½″ x 2″ x 3/16″ **Clearance** .010″
Hand Rear Service
Lining Moulded



CHEVROLET WIRING DIAGRAM, 1940, SERIES MASTER 85
Courtesy of Chevrolet Motor Company

Chevrolet Model 6-Cylinder 85 Year 1940 Series Master 85

Battery Delco **Type** 15-Plate **Volts** 6 **Amps.** 100

Frame Connection Negative

Lighting **Head Lights** Sealed Beam

Dash, Tail and Stop

Parking Lights

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.

Regulation Volt., Current **Cut-in** 6.3 Volts, 9.5 M.P.H.

Relay Air Gap **Contact Gap**

Ignition Delco **Contact Breaker Gap** .018″-.024″

Spark Plug—Size 14 M.M. **Gap** .037″-.040″

Firing Order 1-5-3-6-2-4

Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 3¾″ **Taxable H.P.** 29.4

Piston Ring—Width Oil 1—3/16″, Comp. 2—⅛″

Diam. 3½″ **Gap** Oil .005″, Comp. .005″

Oiling—Type Pressure and Splash **Capacity** 5 Qts., 15 Lbs. at 43 M.P H.

Valves **Intake Timing—Open** 3° B.T.C. **Close** 35° A.B.C.

Intake Clearance .006″ to .008″ Hot

Exhaust Timing—Open 46° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .013″ to .015″ Hot

Carburetor Carter 420S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 14 Qts.

Steering **Camber** 1° **Caster** 2¼° **Toe-in** 5/64″

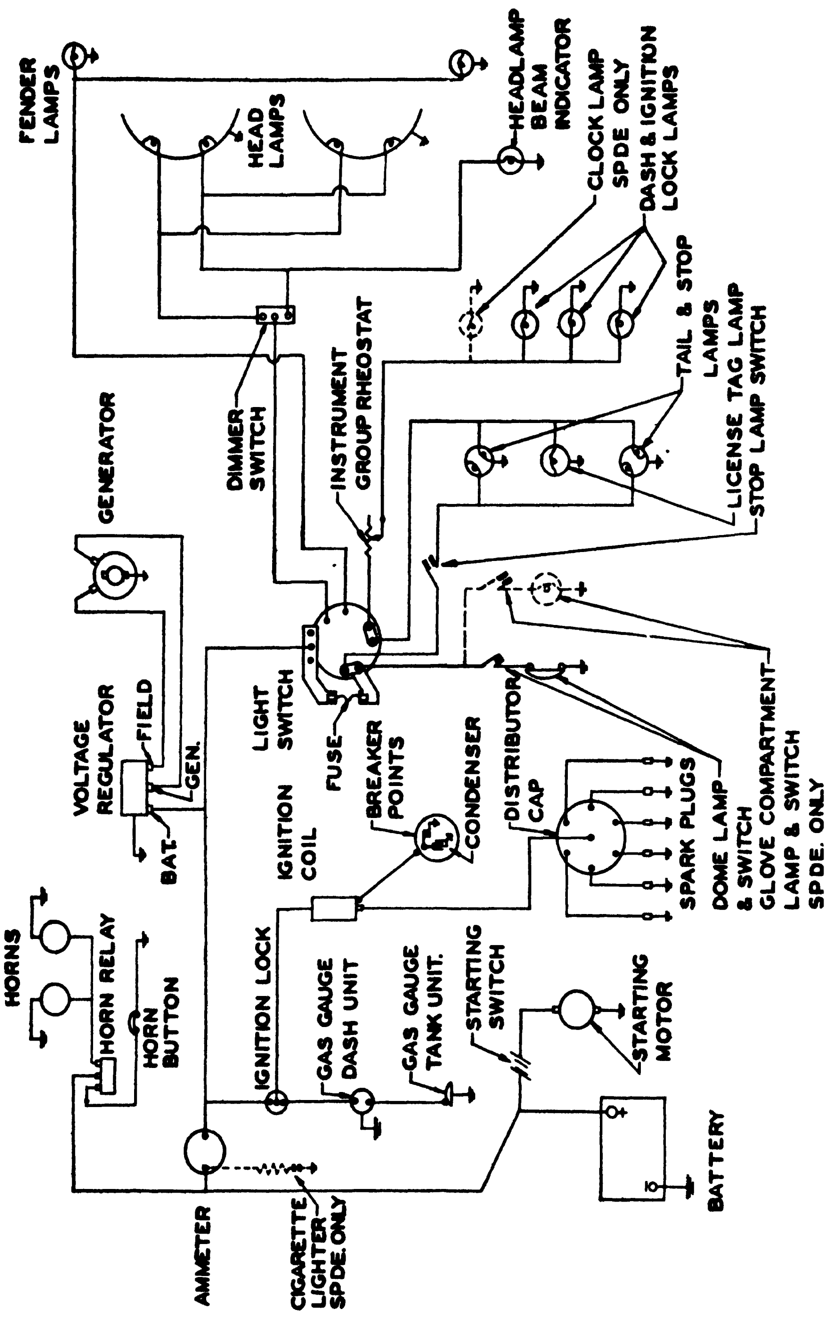
Clutch Inland **Facings** Moulded, 6⅛″ x 9⅛″ x .135″

Gear Ratio Ring 41, Pinion 11 **Type** Hypoid

Axle Semi-Floating

Brakes Own Hydraulic
- **Front** 22⅝″ x 1¾″ x 3/16″ **Clearance**
- **Rear** 22⅝″ x 1¾″ x 3/16″ **Clearance** } Slight drag and back off 4 notches
- **Hand** Rear Service

Lining Moulded



CHEVROLET WIRING DIAGRAM, 1940, SERIES DE LUXE
Courtesy of Chevrolet Motor Company

Chevrolet **Model** 6-Cylinder **Year** 1940 **Series** De Luxe

Battery Delco **Type** 15-Plate **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Head Lights** Sealed Beam
Dash, Tail and Stop
Parking Lights

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.
Regulation Volt., Current **Cut-in** 6.3 Volts, 8.7 M.P.H
Relay Air Gap **Contact Gap**

Ignition Delco **Contact Breaker Gap** .018″-.024″
Spark Plug—Size 14 M.M. **Gap** .037″-.040″
Firing Order 1-5-3-6-2-4
Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 3¾″ **Taxable H.P.** 29.4
Piston Ring—Width Oil 1—3/16″, Comp. 2—⅛″
Diam. 3½″ **Gap** Oil .005″, Comp. .005″
Oiling—Type Pressure and Splash **Capacity** 5 Qts., 15 Lbs. at 43 M.P.H.

Valves **Intake Timing—Open** 3° B.T.C. **Close** 35° A.B.C.
Intake Clearance .013″ Hot
Exhaust Timing—Open 46° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .013″ Hot

Carburetor Carter 420S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 14 Qts.

Steering **Camber** ¼° **Caster** 0° **Toe-in** 0″

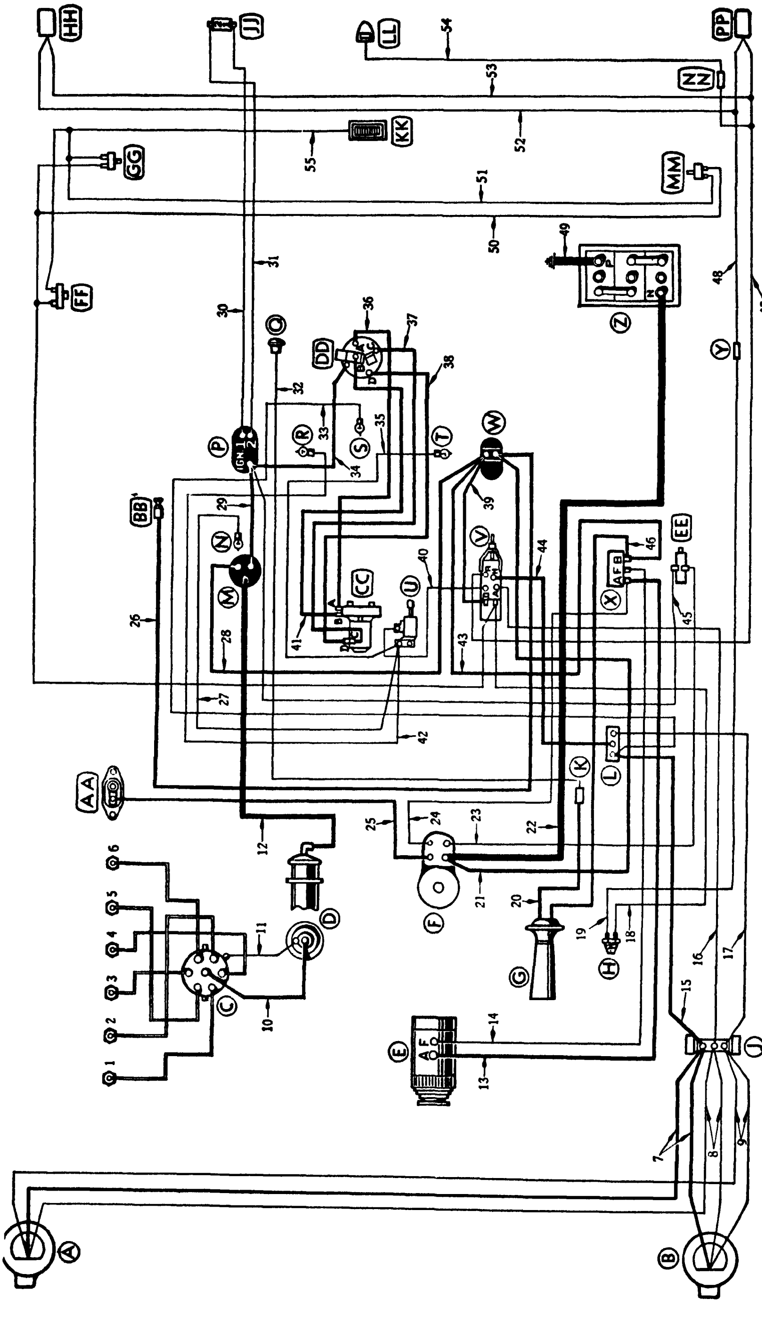
Clutch Inland **Facings** Moulded, 6⅛″ x 9⅛″ x .135″

Gear Ratio Ring 37, Pinion 9 **Type** Hypoid

Axle Semi-Floating

Brakes Own Hydraulic
- **Front** 22⅝″ x 1¾″ x 3/16″ **Clearance**
- **Rear** 22⅝″ x 1¾″ x 3/16″ **Clearance**
- (Clearance, front and rear:) Slight drag and back off 4 notches
- **Hand** Rear Service

Lining Moulded



23X130

CHRYSLER WIRING DIAGRAM, 1940, SERIES C-25
Courtesy of Chrysler Corporation

Chrysler **Model 6-Cylinder** **Year 1940** **Series C-25**

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 119

Frame Connection Positive

Lighting **Head Lights** Sealed Beam 45-35 Watts

Dash, Tail and Stop Mazda, Volts 6-8, 55 C.P. 1½, 1158 C.P.3-21

Parking Lights Mazda, Volts 6-8, 55 C.P. 1½

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed** 2200 R.P.M.

Regulation Volt., Current **Cut-in** 6.4 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 27.34

Piston Ring—Width Oil 2—5/32″, Comp. 2—⅛″

Diam. 3⅜″ **Gap** .007″ on all

Oiling—Type Pump, Gear **Capacity** 5 Qts., 30 to 40 Lbs. at 20 M.P.H.

Valves **Intake Timing—Open** 12° B.T.C. **Close** 44° A.B.C.

Intake Clearance .008″ Hot

Exhaust Timing—Open 50° B.B.C. **Close** 6° A.T.C.

Exhaust Clearance .010″ Hot

Carburetor Carter Ball and Ball E6S1

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts.

Steering **Camber** +¼° **Caster**—1° to +1° **Toe-in** 1/16″

Clutch Borg **Facings** Woven 7″ x 10″ x ⅛″

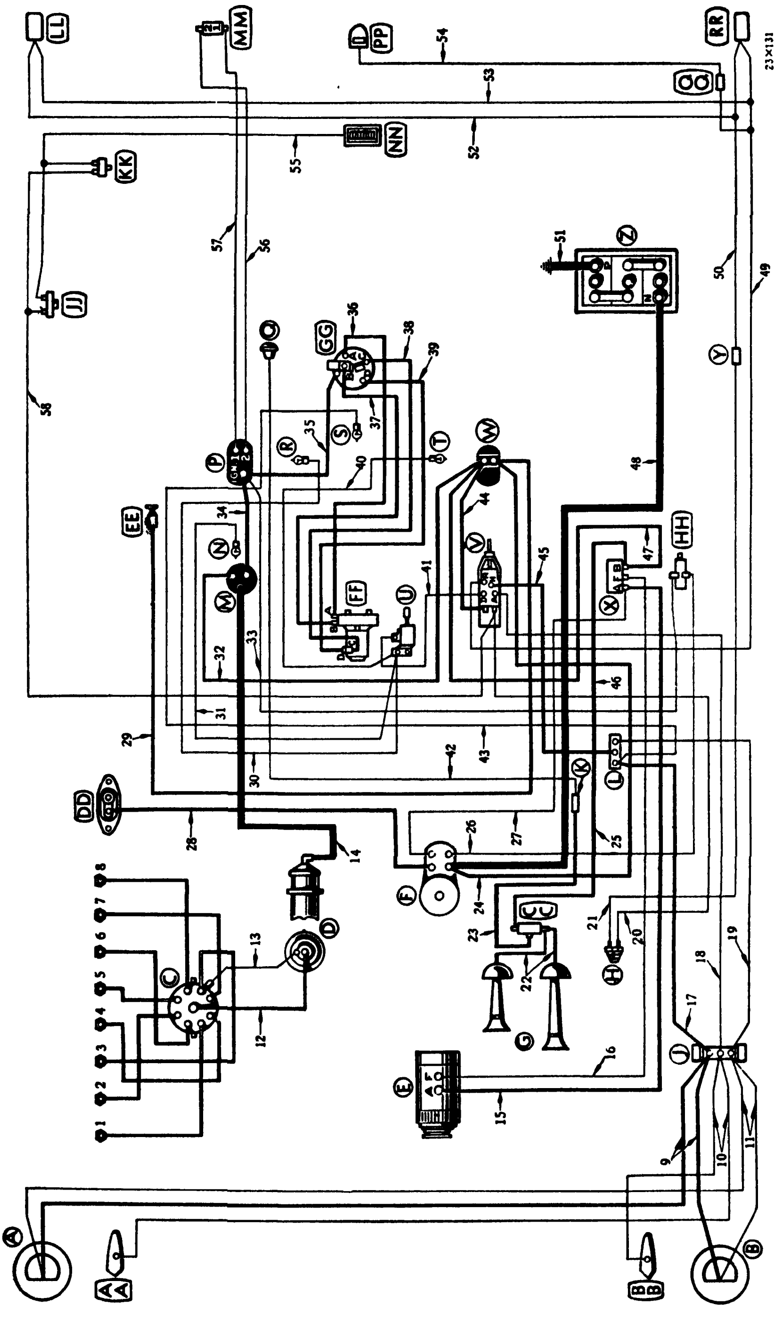
Gear Ratio Ring 39, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic

- **Front** 19 7/16″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Rear** 19 7/16″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Hand** 17 1/16″ x 2″ x 5/32″ **Clearance** .015″ Trans.

Lining Moulded



CHRYSLER WIRING DIAGRAM, 1940, SERIES C-26
Courtesy of Chrysler Corporation

Chrysler **Model 8-Cylinder** **Year 1940** **Series C-26**

Battery Willard **Type** 19-Plate **Volts** 6 **Amps.** 135

Frame Connection Positive

Lighting **Head Lights** Sealed Beam 45-35 Watts

Dash, Tail and Stop Mazda, Volts 6-8, 55 C.P. 1½, 1158 C.P. 3-21

Parking Lights Mazda, Volts 6-8, 55 C.P. 1½

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed** 2200 R.P.M.

Regulation Volt., Current **Cut-in** 6.4 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .018″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing T.D.C.

Engine **Bore** 3¼″ **Stroke** 4⅞″ **Taxable H.P.** 33.80

Piston Ring—Width Oil 2—5/32″, Comp. 2—⅛″

Diam. 3¼″ **Gap** .007″ on all

Oiling—Type Pump, Gear **Capacity** 6 Qts., 30 to 45 Lbs. at 20 M.P.H.

Valves **Intake Timing—Open** 6° B.T.C. **Close** 50° A.B.C.

Intake Clearance .008″ Hot

Exhaust Timing—Open 44° B.B.C. **Close** 12° A.T.C.

Exhaust Clearance .010″ Hot

Carburetor Stromberg AAV2

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 24 Qts.

Steering **Camber** +¼° **Caster** −1° to +1° **Toe-in** 1/16″

Clutch Borg **Facings** 6½″ x 11″ x ⅛″ Woven

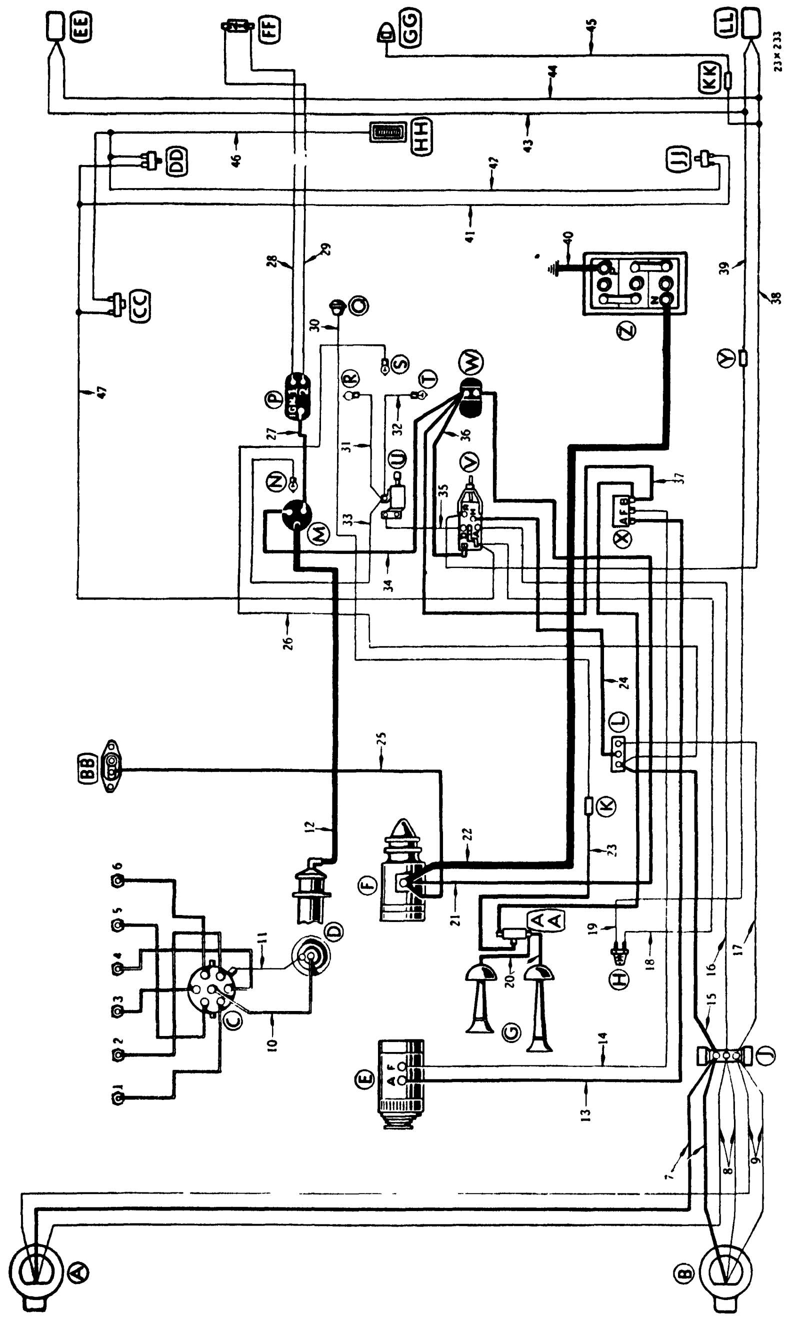
Gear Ratio Ring 43, Pinion 11 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic

- **Front** 25⅛″ x 2″ x 13/64″ **Clearance Toe** .007″ **Heel** .006″
- **Rear** 22 3/16″ x 2″ x 13/64″ **Clearance Toe** .007″ **Heel** .006″
- **Hand** 20⅛″ x 2½″ x 5/32″ **Clearance** .015″ Trans.

Lining Moulded



DE SOTO WIRING DIAGRAM, 1940, SERIES S-7
Courtesy of Chrysler Corporation

De Soto **Model 6-Cylinder** **Year 1940** **Series S-7**

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting **Head Lights** Sealed Beam 45-35 Watts
Dash, Tail and Stop Mazda Volts 6-8, 55 C.P. 1½, 1158 C.P. 3-21
Parking Lights Mazda Volts 6-8, 5 C.P. 1½

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed** 2200 R.P.M.
Regulation Volt., Current **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 2° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4¼″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″, Comp. 2—⅛″
Diam. 3⅜″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts. 30 to 45 Lbs. at 20 M.P.H.

Valves **Intake Timing—Open** 12° B.T.C. **Close** 44° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 6° A.T.C
Exhaust Clearance .010″ Hot

Carburetor Carter Ball and Ball E6N1

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Steering **Camber** +¼° **Caster** −1° to + 1° **Toe-in** 1/16″

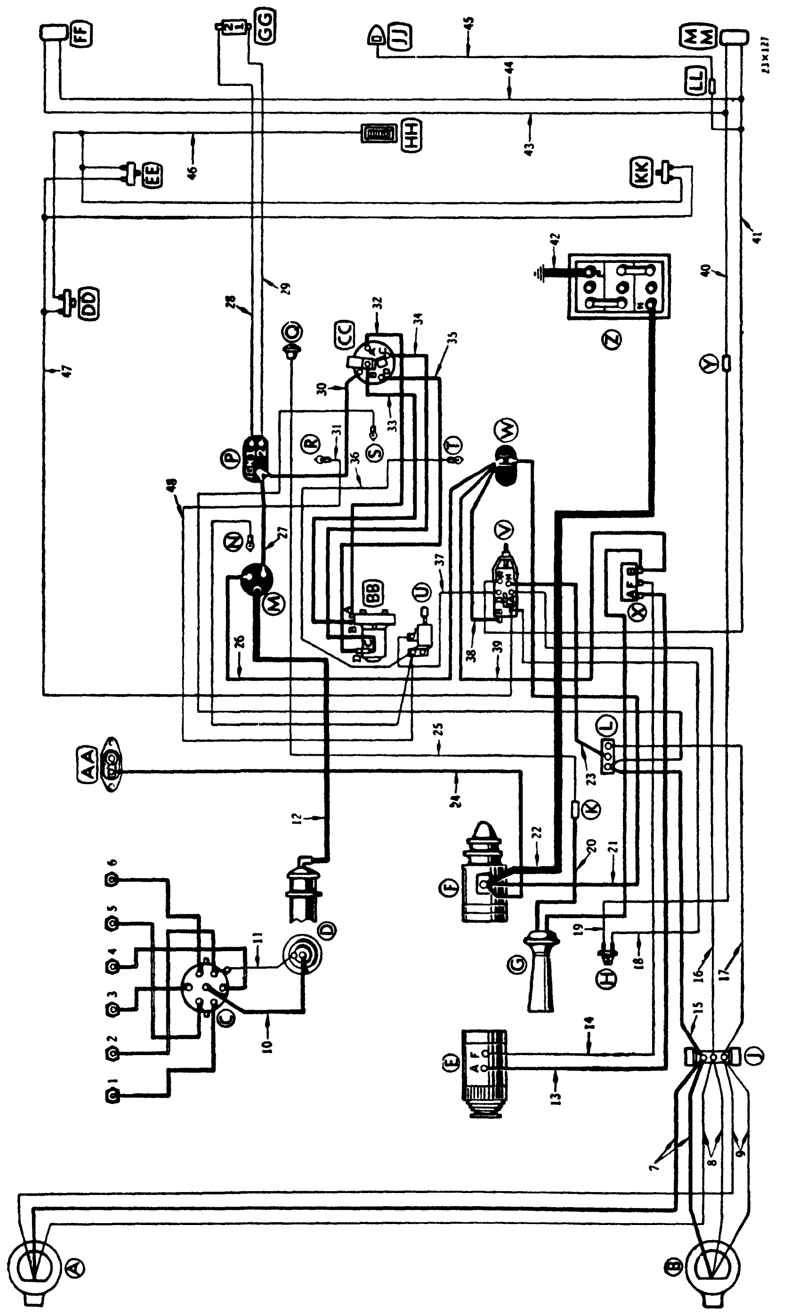
Clutch Borg **Facings** Woven, 7″ x 10″ x ⅛″

Gear Ratio Ring 41, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 19 7/16″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Rear** 19 7/16″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Hand** 17 1/16″ x 2″ x 5/32″ **Clearance** .015″ Trans.

Lining Moulded



DODGE WIRING DIAGRAM, 1940, SERIES D14-D17
Courtesy of Chrysler Corporation

Dodge **Model** 6-Cylinder **Year** 1940 **Series** D14-D17

Battery Auto-Lite **Type** 15-Plate **Volts** 6 **Amps.** 95
Frame Connection Positive

Lighting **Head Lights** Sealed Beam 45-35 Watts
Dash, Tail and Stop Mazda Volts 6-8, 55 C.P. 1½, 1158 C.P. 3-21
Parking Lights Mazda Volts 6-8, 55 C.P. 1½

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed** 2200 R.P.M.
Regulation Volt., Current **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—**Size** 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35
Piston Ring—**Width** Oil 2—5/32″, Comp. 2—⅛″
Diam. 3¼″ **Gap** .007″ on all
Oiling—**Type** Pump, Gear **Capacity** 5 Qts., 30 to 45 Lbs. at 20 M.P.H.

Valves **Intake Timing**—**Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—**Open** 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Stromberg BXV-3

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 15 Qts.

Steering **Camber** +¼° **Caster** −1° to +1° **Toe-in** 1/16″

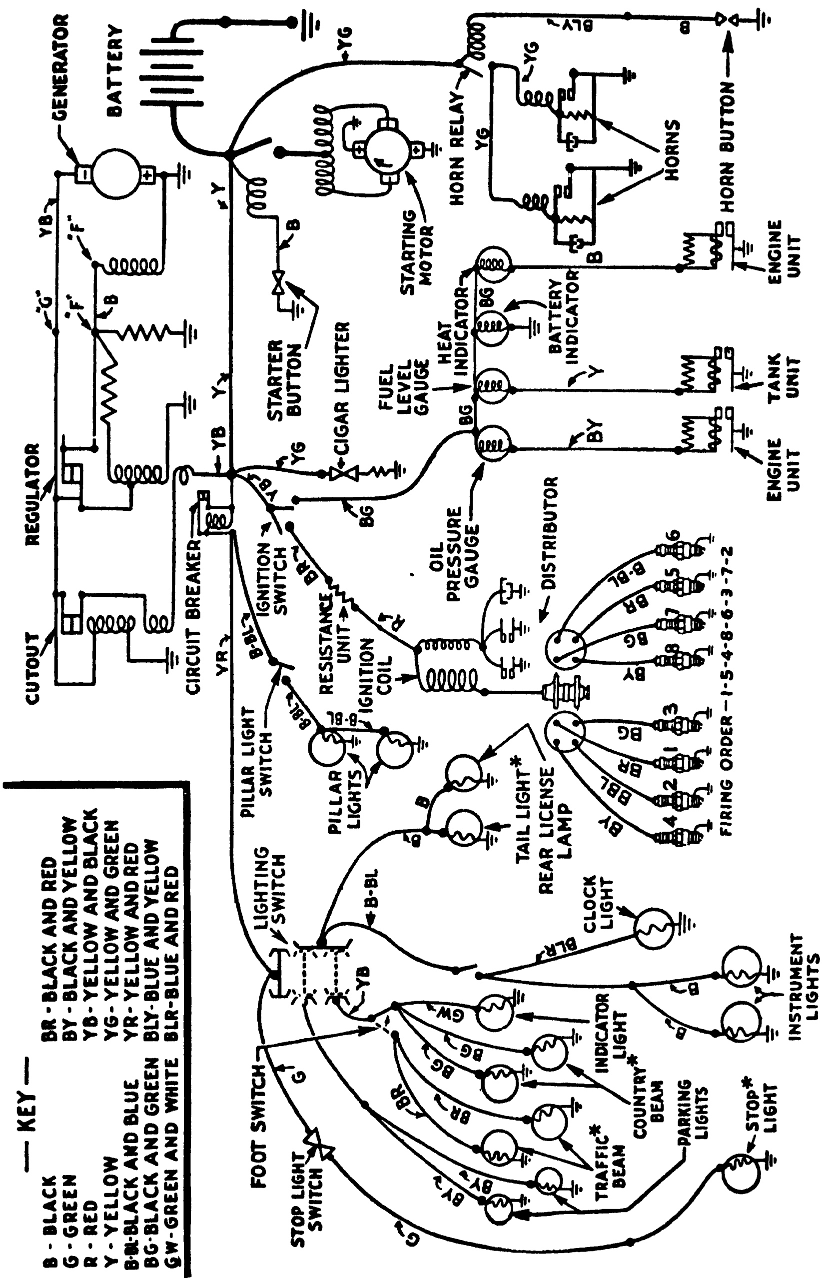
Clutch Borg **Facings** Woven, 7″ x 10″ x ⅛″

Gear Ratio Ring 41, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 19 7/16″ x 2″ x 13/64″ **Clearance** **Toe** .012″ **Heel** .006″
- **Rear** 19 7/16″ x 2″ x 13/64″ **Clearance** **Toe** .012″ **Heel** .006″
- **Hand** 17 1/16″ x 2″ x 5/32″ **Clearance** .015″ **Trans.**

Lining Moulded



FORD WIRING DIAGRAM, 1940, SERIES 60
Courtesy of Ford Motor Company

Ford **Model V-8-Cylinder** **Year 1940** **Series 60**

Battery Own **Type** 17-Plate **Volts** 6 **Amps.** 120

Frame Connection Positive

Lighting **Head Lights** Sealed Beam Volts 6-8, C.P. 32-32

Dash, Tail and Stop Volts 6-8, C.P. 3, C.P. 3-21

Parking Lights Volts 6-8, C.P. 15

Starter and Generator Own

Generator Hot **Max. Chg. Rate** 30 Amps. **Speed** 1200 R.P.M.

Regulation Volt., Current **Cut-in** 7 Volts at 10 M.P.H.

Relay Air Gap **Contact Gap**

Ignition Own **Contact Breaker Gap** .014″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-4-8-6-3-7-2

Timing 4° B.T.C.

Engine **Bore** 2.6″ **Stroke** 3.2″ **Taxable H.P.** 21.6

Piston Ring—Width Oil 1—5/32″, Comp. 2—3/32″

Diam. 2.6″ **Gap** Oil .005″, Comp. .009″

Oiling—Type Pump, Gear **Capacity** 4 Qts., 30 Lbs.

Valves **Intake Timing—Open** 9½° B.T.C. **Close** 54½° A.B.C.

Intake Clearance .0125″

Exhaust Timing—Open 57½° B.B.C. **Close** 6½° A.T.C.

Exhaust Clearance .0125″

Carburetor Holley AA 7/8

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 16 Qts.

Steering **Camber** 1/4° **Caster** 4½° **Toe-in** 1/16″

Clutch Long **Facings** Moulded, 6″ x 8½″ x .137″

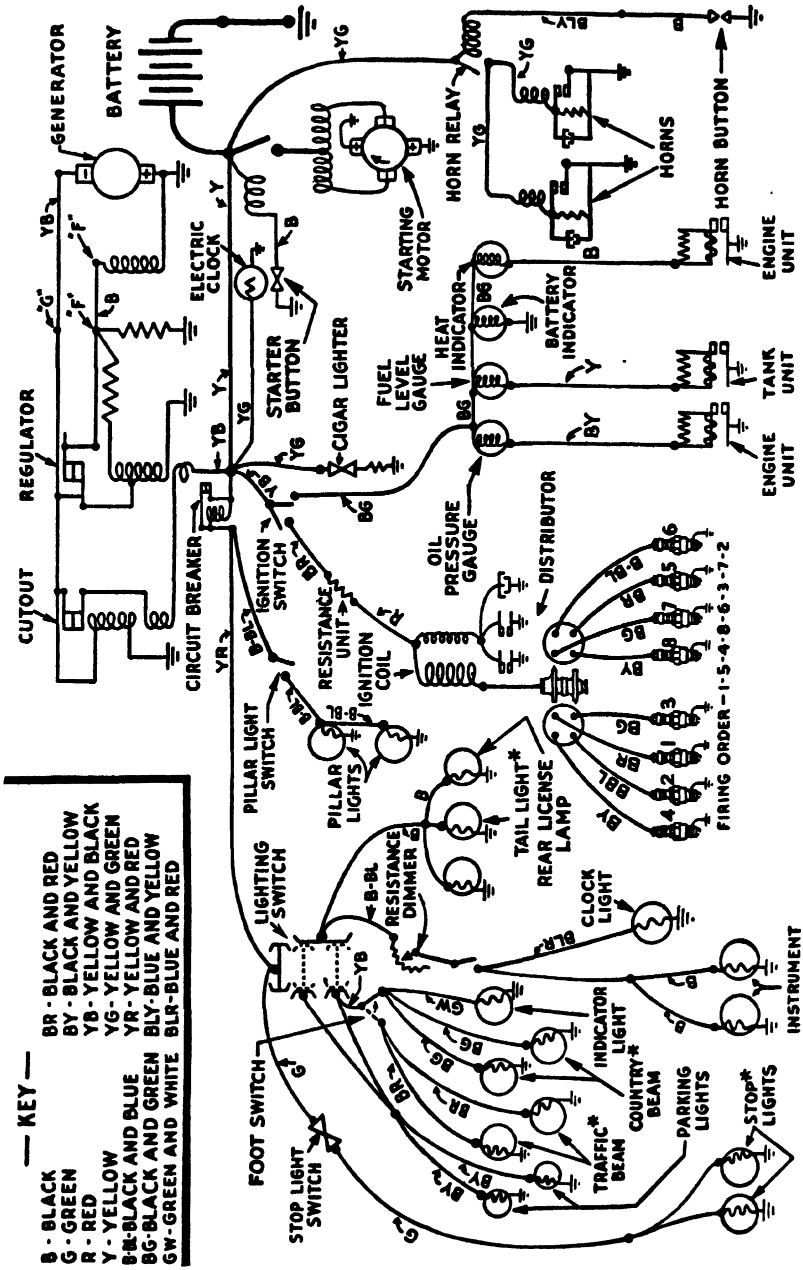
Gear Ratio Ring 40, Pinion 9 **Type** Spiral

Axle 3/4-Floating

Brakes Lockheed Hydraulic

- **Front** 23¼″ x 1¾″ x 13/64″ **Clearance** **Toe** **Heel**
- **Rear** 23¼″ x 1¾″ x 13/64″ **Clearance** **Toe** **Heel**
- **Hand** Rear Service

Lining Moulded



FORD WIRING DIAGRAM, 1940, SERIES DE LUXE AND 85

Courtesy of Ford Motor Company

Ford **Model V-8-Cylinder** **Year 1940** **Series De Luxe and 85**

Battery Own **Type** 17-Plate **Volts** 6 **Amps.** 120

Frame Connection Positive

Lighting **Head Lights** Sealed Beam Volts 6-8, C.P. 32-32

Dash, Tail and Stop Volts 6-8, C.P. 3, C.P. 3-21

Parking Lights Volts 6-8, C.P. 15

Starter and Generator Own

Generator Hot **Max. Chg. Rate** 30 Amps. **Speed** 1200 R.P.M.

Regulation Volt., Current **Cut-in** 7 Volts at 10 M.P.H.

Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-4-8-6-3-7-2

Timing 4° B.T.C.

Engine **Bore** 3.062″ **Stroke** 3.075″ **Taxable H.P.** 30

Piston Ring—Width Oil 1—5/32″, Comp. 2—3/32″

Diam. 3.062″ **Gap** .012″ on all

Oiling—Type Pump, Gear **Capacity** 5 Qts. 30 Lbs.

Valves **Intake Timing—Open** D.C. **Close** 44° A.B.C.

Intake Clearance .0125″

Exhaust Timing—Open 48° B.B.C. **Close** 6° A.T.C.

Exhaust Clearance .0125″

Carburetor Holley AA1

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 22 Qts.

Steering **Camber** 1/4° **Caster** 4 1/2° **Toe-in** 1/16″

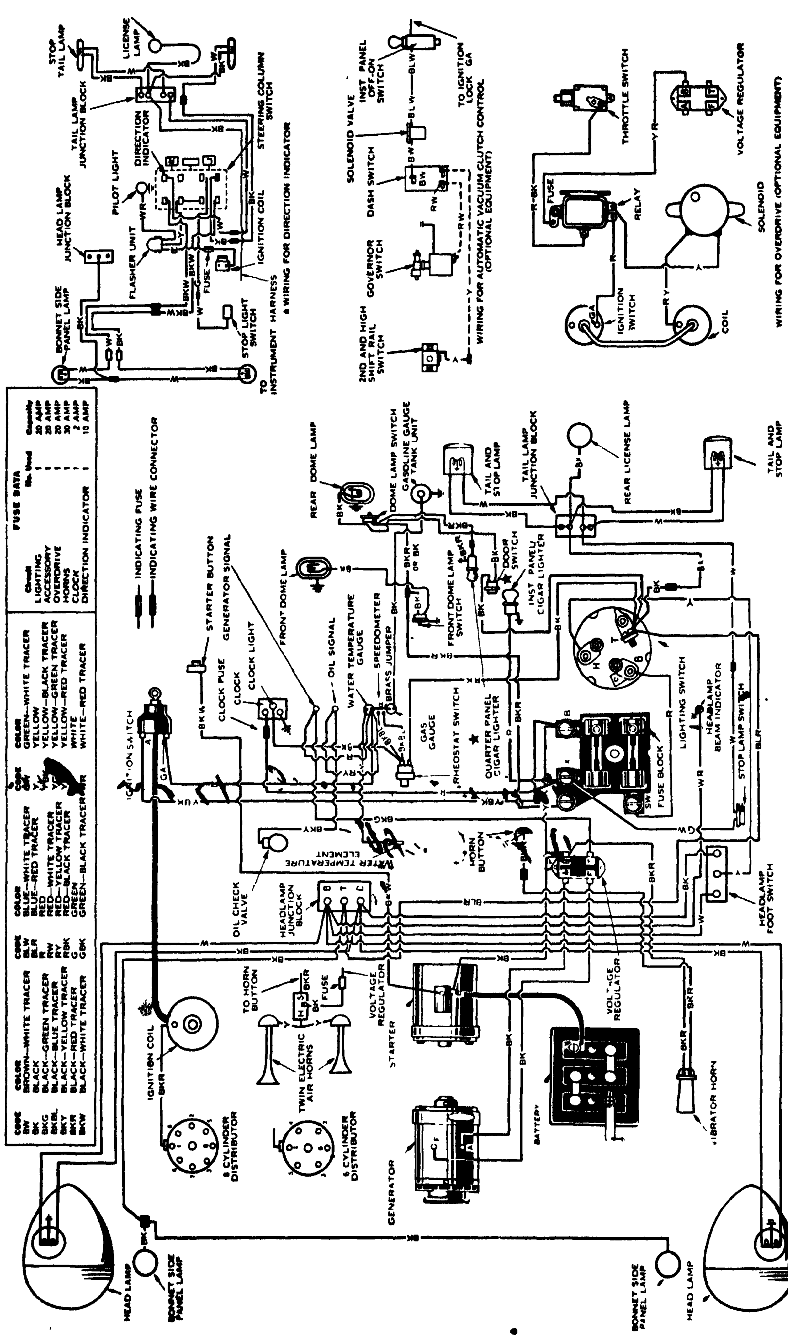
Clutch Long **Facings** Moulded, 5 3/4″ x 9″ x .137″

Gear Ratio Ring 34, Pinion 9 **Type** Spiral

Axle 3/4-Floating

Brakes Lockheed Hydraulic
- **Front** 23 1/4″ x 1 3/4″ x 13/64″ **Clearance** **Toe** **Heel**
- **Rear** 23 1/4″ x 1 3/4″ x 13/64″ **Clearance** **Toe** **Heel**
- **Hand** Rear Service

Lining Woven and Moulded



HUDSON WIRING DIAGRAM, 1940, SERIES 40T, 40P, 41, 43, 44, 47

Courtesy of Hudson Motor Car Company

Hudson **Model 6-Cylinder** **Year 1940** **Series 40T, 40P**

Battery National **Type** 17-Plate **Volts** 6 **Amps.** 96
Frame Connection Positive

Lighting **Head Lights** Sealed Beam
Dash, Tail and Stop
Parking Lights

Starter and Generator Auto-Lite

Generator Hot **Max Chg. Rate** 26-29 Amps. **Speed** 3100 R.P.M.
Regulation Volt., Current **Cut-in** 6.4 Volts, 9.4 M.P.H
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** 020″
Spark Plug—Size 14 M.M **Gap** .032″
Firing Order 1-5-3-6-2-4
Timing D.C

Engine **Bore** 3″ **Stroke** 4⅛″ **Taxable H.P.** 21.60
Piston Ring—Width Oil 1—3/16″, 1—5/32″, Comp. 2—3/32″
Diam. 3″ **Gap** .009″ on all
Oiling—Type Splash, Plunger **Capacity** 5½ Qts., 3 Lbs.

Valves **Intake Timing—Open** 10¾° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 18¾° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter 454S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

Steering **Camber** ¼° to ¾° **Caster** −¼° to +¼° **Toe-in** 0″ to 1/16″

Clutch Own **Facings** Cork, 5¼″ x 8 11/16″ x 13/64″

Gear Ratio Ring 41, Pinion 9 **Type** Helical

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 9 1/16″ x 1¾″ x 3/16″ **Clearance** 010″
Rear 9 1/16″ x 1¾″ x 3/16″ **Clearance** .010″
Hand Rear Service
Lining Woven and Moulded

Hudson **Model 6-Cylinder** **Year 1940** **Series 41, 43**

Battery National **Type** 17-Plate **Volts** 6 **Amps.** 96

Frame Connection Positive

Lighting **Head Lights** Sealed Beam

Dash, Tail and Stop

Parking Lights

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 32-38 Amps. **Speed** 3600 R.P.M.

Regulation Volt., Current **Cut-in** 6.4 Volts, 9.4 M.P.H.

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .032″

Firing Order 1-5-3-6-2-4

Timing D.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.60

Piston Ring—Width Oil 1—3/16″, 1—5/32″, Comp. 2—3/32″

Diam. 3″ **Gap** .009″ on all

Oiling—Type Splash, Plunger **Capacity** 5½ Qts., 3 Lbs.

Valves **Intake Timing—Open** 10¾° B.T.C. **Close** 60° A.B.C.

Intake Clearance .006″ Hot

Exhaust Timing—Open 50° B.B.C. **Close** 18¾° A.T.C.

Exhaust Clearance .008″ Hot

Carburetor Carter 461S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

Steering **Camber** ¼° to ¾° **Caster** −¼° to +¼° **Toe-in** 0″ to 1/16″

Clutch Own **Facings** Cork Series 41 only, 5¼″ x 8 11/16″ x 13/64″

Gear Ratio Ring 37, Pinion 9 **Type** Helical

Axle Semi-Floating

Brakes Series 41 only Bendix Hydraulic
- **Front** 22⅛″ x 1¾″ x 3/16″ **Clearance** .010″
- **Rear** 22⅛″ x 1¾″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Woven and Moulded

Hudson **Model 8-Cylinder** **Year 1940** **Series 44, 47**

Battery National **Type** 19-Plate **Volts** 6 **Amps.** 108
Frame Connection Positive

Lighting **Head Lights** Sealed Beam
Dash, Tail and Stop
Parking Lights

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 32-38 Amps. **Speed** 3600 R.P.M.
Regulation Volt., Current **Cut-in** 6.4 Volts, 9.4 M.P.H
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .017″
Spark Plug—Size 14 M.M. **Gap** .032″
Firing Order 1-6-2-5-8-3-7-4
Timing D.C.

Engine **Bore** 3″ **Stroke** 4½″ **Taxable H.P.** 28.0
Piston Ring—Width Oil 1—3/16″, 1—5/32″, Comp. 2—3/32″
Diam. 3″ **Gap** .009″ on all
Oiling—Type Splash, Plunger **Capacity** 9 Qts., 3 Lbs.

Valves **Intake Timing—Open** 10¾° B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 18¾° A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter 455S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts.

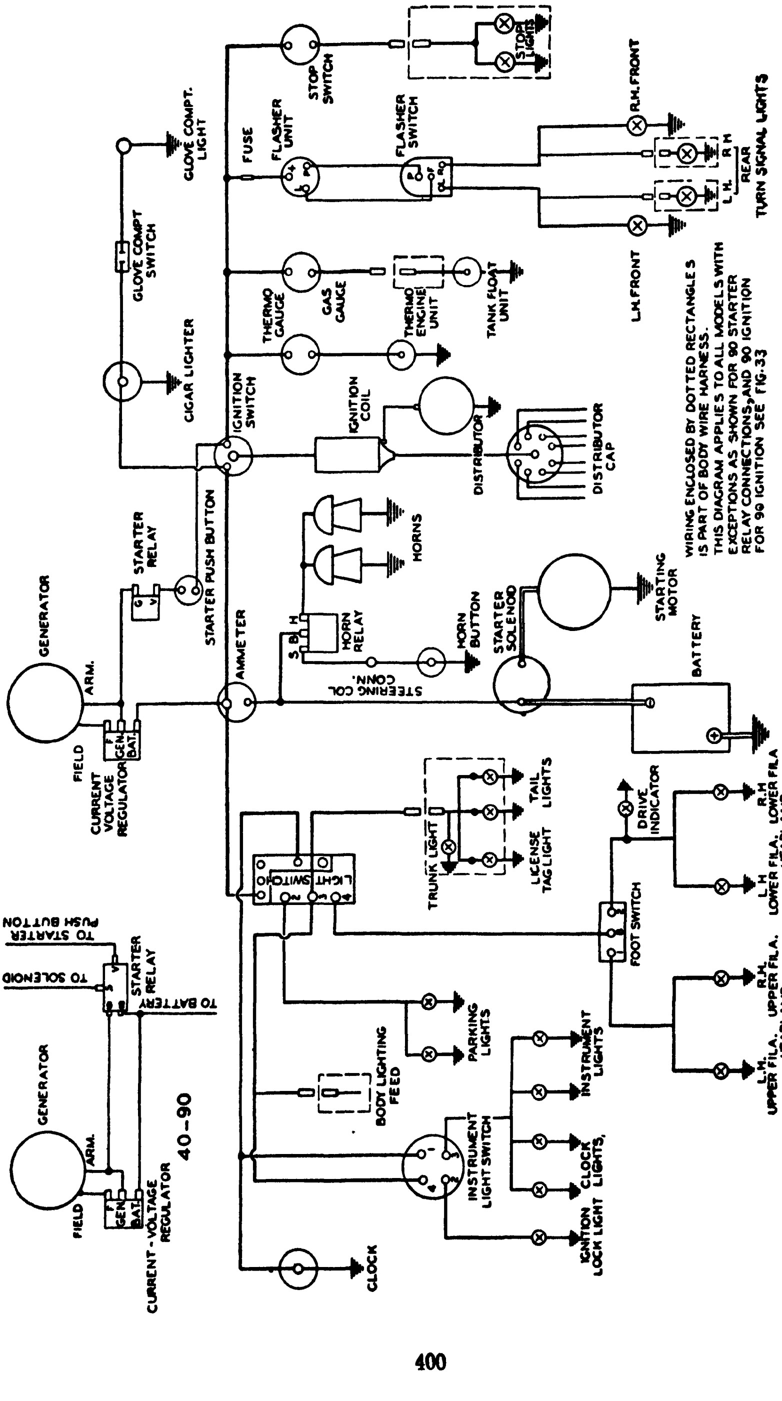
Steering **Camber** ¼° to ¾° **Caster** −¼° to +¼° **Toe-in** 0″ to 1/16″

Clutch Own **Facings** Cork, also Series 43, 6⅜″ x 9 13/16″ x 13/64″

Gear Ratio Ring 37, Pinion 9 **Type** Helical

Axle Semi-Floating

Brakes Series 43, 44, 47 Bendix Hydraulic
Front 23 15/16″ x 1¾″ x 7/32″ **Clearance** .010″
Rear 23 15/16″ x 1¾″ x 7/32″ **Clearance** .010″
Hand Rear Service
Lining Woven and Moulded



LA SALLE WIRING DIAGRAM, 1940, SERIES 40-50, 52

Courtesy of Cadillac Motor Car Company

La Salle **Model V-8-Cylinder** **Year 1940** **Series 40-50, 52**

Battery Delco **Type** 17K2W **Volts** 6 **Amps.** 115

Frame Connection Positive

Lighting **Head Lights** Sealed Beam

Dash, Tail and Stop Mazda Volts 6-8; 55, C.P. 1.5, 1154 C.P. 3-21

Parking Lights Mazda Volts 6-8; 1154L, C.P. 21-3

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 32 Amps. **Speed** 2450 R.P.M.

Regulation Volt., Current **Cut-in** 7.5 Volts

Relay Air Gap .010″–.014″ **Contact Gap** .030″–.045″

Ignition Delco **Contact Breaker Gap** .0125″

Spark Plug—Size 10 M.M. **Gap** .025″–.030″

Firing Order 1-8-7-3-6-5-4-2

Timing 5° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 36.45

Piston Ring—Width Oil 2—5/32″, Comp. 1—3/32″, 1—⅛″

Diam. 3⅜″ **Gap** Oil .007″–.015″, Comp. .007″–.012″

Oiling—Type Pump, Gear **Capacity** 7 Qts., 25 Lbs. at 30 M.P.H.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.

Intake Clearance Automatic Take-up

Exhaust Timing—Open 52° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance Automatic Take-up

Carburetor Carter W.D.O.-460-S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 25 Qts.

Steering **Camber** 0° to ¾° **Caster** −1¾° to −2¾° **Toe-in** 1/32″ to 3/32″

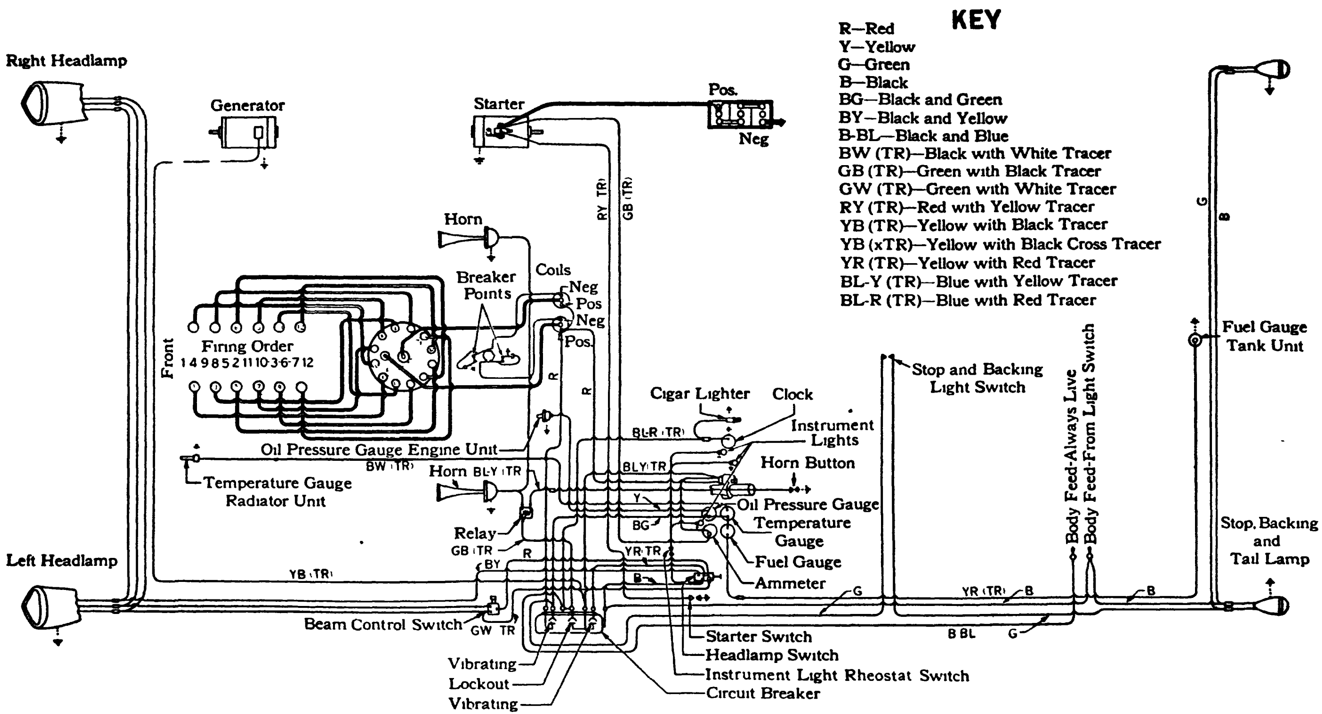
Clutch Long **Facings** Woven, 6¾″ x 10″ x .137″, 2 Required

Gear Ratio Ring 47, Pinion 12 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 24½″ x 2″ x 3/16″ **Clearance** .010″
- **Rear** 24½″ x 2″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded



LINCOLN WIRING DIAGRAM, 1940, MODEL V-12 CYLINDER
Courtesy of Ford Motor Company

Lincoln **Model V-12-Cylinder** **Year 1940** **Series**

Battery **Exide** **Type** X-12-L **Volts** 6 **Amps.** 147

Frame Connection Negative

Lighting **Head Lights** Sealed Beam, Volts 6-8, C.P. 32-32

Dash, Tail and Stop Volts 6-8, C.P. 3, C.P. 3-21

Parking Lights Volts 6-8, C.P. 1½

Starter and Generator

Generator **Max. Chg. Rate** **Speed**

Regulation **Cut-in**

Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .020″

Spark Plug—Size **Gap** .030″

Firing Order 1-4-9-8-5-2-11-10-3-6-7-12

Timing D.C.

Engine **Bore** 3⅛″ **Stroke** 4½″ **Taxable H.P.** 46.8

Piston Ring—Width Oil 2—5/32″, Comp. 2—⅛″

Diam. 3⅛″ **Gap** Oil—.007″, Comp.—.008″

Oiling—Type Pump, Gear **Capacity** 12 Qts., 40 Lbs. at 50 M.P.H.

Valves **Intake Timing—Open** **Close**

Intake Clearance Automatic take-up Hydraulic

Exhaust Timing—Open **Close**

Exhaust Clearance Automatic take-up Hydraulic

Carburetor Stromberg EE. 22

Cooling System Centrifugal **Type** Pump **Capacity** 8 Gallons

Steering **Camber** 1° **Caster** 1½° **Toe-in** 1/16″

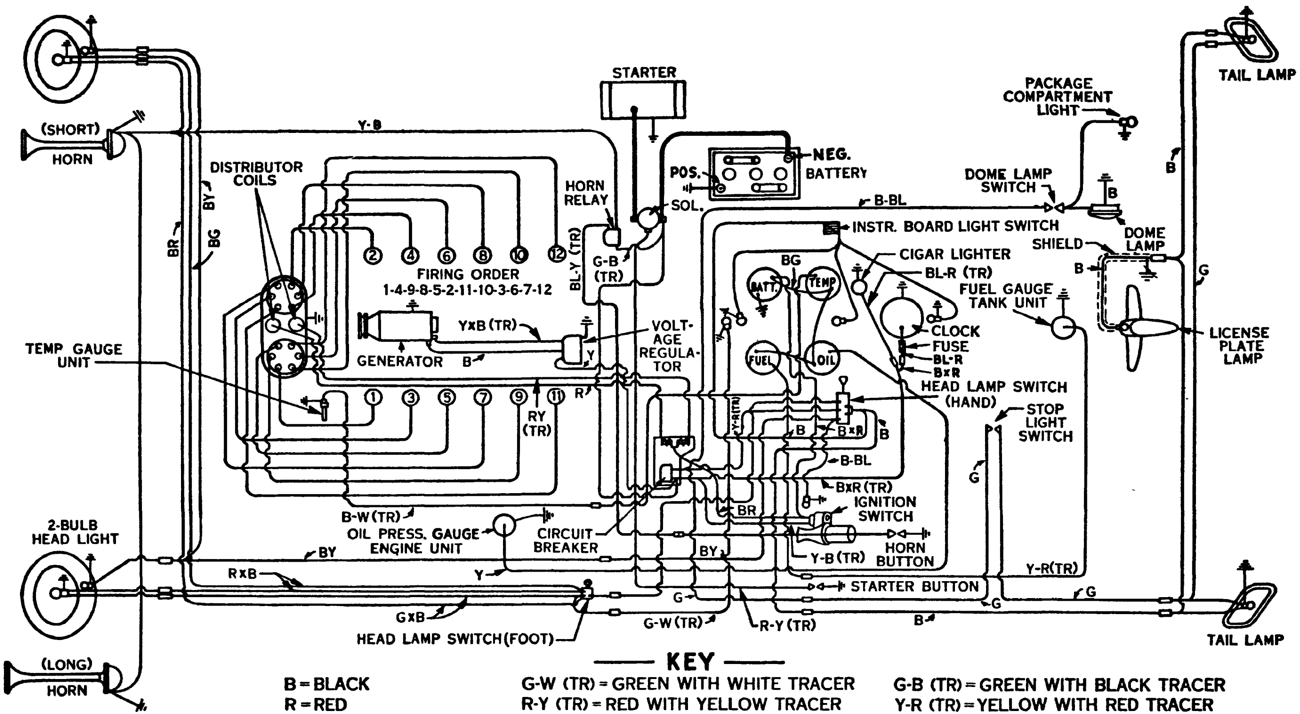
Clutch Long **Facings** Woven, 7″ x 12″ x .137″

Gear Ratio Ring 55, Pinion 12 **Type** Spiral

Axle Full-Floating

Brakes Bendix Mechanical
- **Front** 33½″ x 2½″ x ¼″ **Clearance** **Toe** **Heel**
- **Rear** 33½″ x 2½″ x ¼″ **Clearance** **Toe** **Heel**
- **Hand** 4 Wheels

Lining Woven and Moulded



KEY

B = BLACK
R = RED
Y = YELLOW
G = GREEN
BG = BLACK AND GREEN
BR = BLACK AND RED
BY = BLACK AND YELLOW

G-W (TR) = GREEN WITH WHITE TRACER
R-Y (TR) = RED WITH YELLOW TRACER
B-W (TR) = BLACK WITH WHITE TRACER
BL-Y (TR) = BLUE WITH YELLOW TRACER
BL-R (TR) = BLUE WITH RED TRACER
Y-B (TR) = YELLOW WITH BLACK TRACER
B-BL (TR) = BLACK AND BLUE TRACER

G-B (TR) = GREEN WITH BLACK TRACER
Y-R (TR) = YELLOW WITH RED TRACER
Y x B (TR) - YELLOW WITH BLACK CROSS TRACER
R x B (TR) - RED WITH BLACK CROSS TRACER
G x B (TR) - GREEN WITH BLACK CROSS TRACER
B x R (TR) - BLACK WITH RED CROSS TRACER

LINCOLN-ZEPHYR WIRING DIAGRAM, 1940, MODEL V-12 CYLINDER

Courtesy of Ford Motor Company

Lincoln-Zephyr Model V-12-Cylinder Year 1940 Series

Battery Own **Type** 17-Plate **Volts** 6 **Amps.** 100
Frame Connection Positive

Lighting **Head Lights** Sealed Beam, Volts 6-8, C.P. 32-32
Dash, Tail and Stop Volts 6-8, C.P. 3, C.P. 3-21
Parking Lights Volts 6-8, C.P. 1.5

Starter and Generator Own

Generator Hot **Max. Chg. Rate** 26 Amps. **Speed** 1200 R.P.M.
Regulation Volt., Current **Cut-in**
Relay Air Gap **Contact Gap**

Ignition Own **Contact Breaker Gap** .014″
Spark Plug—Size 14 M.M. **Gap** .028″
Firing Order 1L-2R-5L-4R-3L-1R-6L-5R-2L-3R-4L-6R
Timing 4° B.T.C.

Engine **Bore** 2.875″ **Stroke** 3.75″ **Taxable H.P.** 39.6
Piston Ring—Width Oil 1—3/16″, Comp. 2—3/32″
Diam. 2.875″ **Gap** .008″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts., 40 Lbs.

Valves **Intake Timing—Open** 10½° B.T.C. **Close** 35½° A.B.C.
Intake Clearance Hydraulic Take-up
Exhaust Timing—Open 60° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance Hydraulic Take-up

Carburetor Holley AA1

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 27 Qts.

Steering **Camber** ¼° **Caster** 1½° **Toe-in** 1/16″

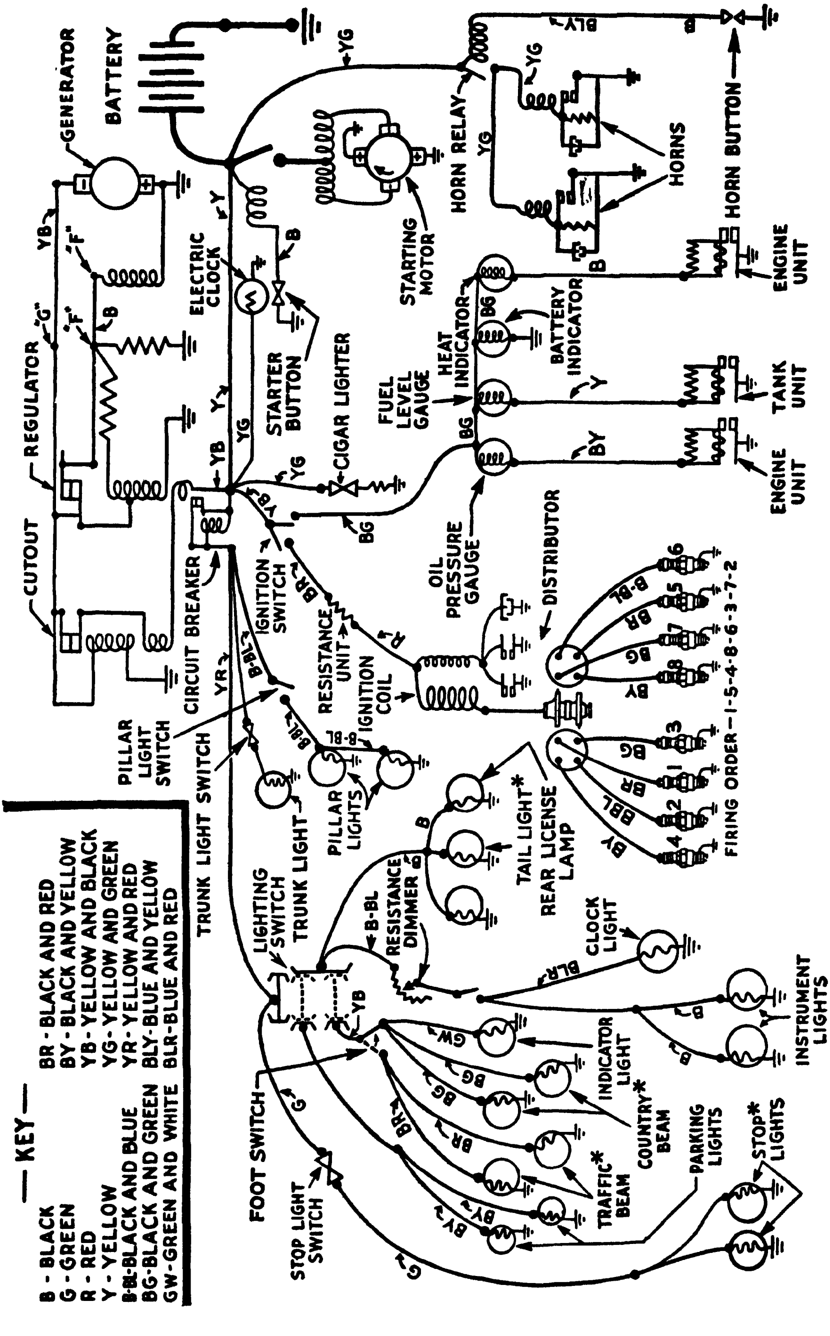
Clutch Long **Facings** Woven, 6¾″ x 10″ x .137″

Gear Ratio Ring 40, Pinion 9 **Type** Hypoid

Axle ¾-Floating

Brakes Bendix Hydraulic
- **Front** 23 29/32″ x 1¾″ x 13/64″ **Clearance** .010″
- **Rear** 23 29/32″ x 1¾″ x 13/64″ **Clearance** .010″
- **Hand** Rear Service

Lining Woven and Moulded



MERCURY WIRING DIAGRAM, 1940, MODEL 8-CYLINDER
Courtesy of Ford Motor Company

Mercury **Model 8-Cylinder** **Year 1940** **Series**

Battery Own **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Head Lights** Sealed Beam Fixed Focus C.P. 32-32
Dash, Tail and Stop Volts 6-8, C.P. 3, C.P. 3-21
Parking Lights Volts 6-8, C.P. 1.5

Starter and Generator Own

Generator Hot **Max. Chg. Rate** 30 Amps. **Speed** 1200 R.P.M.
Regulation Volt., Current **Cut-in** 7 Volts, 8 M.P.H.
Relay Air Gap **Contact Gap**

Ignition Own **Contact Breaker Gap** .014″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-4-8-6-3-7-2
Timing 4° B.T.C.

Engine **Bore** 3.187″ **Stroke** 3.75″ **Taxable H.P.** 32.5
Piston Ring—Width Oil 1—5/32″, Comp. 2—3/32″
Diam. 3.187″ **Gap** .012″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts., 30 Lbs.

Valves **Intake Timing—Open** D.C. **Close** 44° A.B.C.
Intake Clearance .0125″
Exhaust Timing—Open 48° B.B.C. **Close** 6° A.T.C.
Exhaust Clearance .0125″

Carburetor Holley AA1

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 21 Qts.

Steering **Camber** 4½° **Caster** ¼° **Toe-in** 1/16″

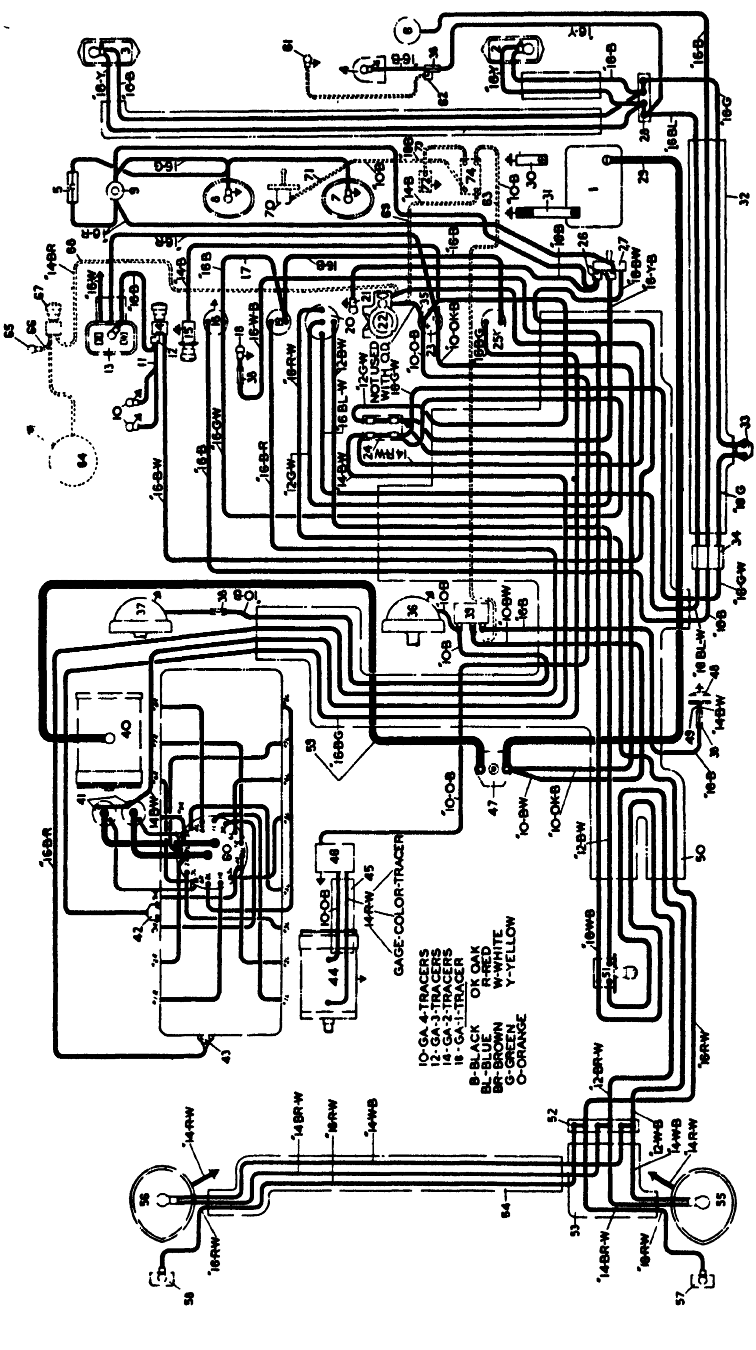
Clutch Long **Facings** Moulded, 5¾″ x 9″ x .137″

Gear Ratio Ring 39, Pinion 11 **Type** Spiral

Axle ¾-Floating

Brakes Lockheed Hydraulic
- **Front** 23¼″ x 1¾″ x .20″ **Clearance** **Toe** **Heel**
- **Rear** 23¼″ x 1¾″ x .20″ **Clearance** **Toe** **Heel**
- **Hand** Rear Service

Lining Woven and Moulded



NASH WIRING DIAGRAM, 1940, SERIES 4080
Courtesy of Nash-Kelvinator Corporation

Nash **Model Ambassador 8** **Year 1940** **Series 4080**

Battery U.S.L. **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Head Lights** Sealed Beam
Dash, Tail and Stop Volts 6-8, C.P. 1½, C.P. 3-2
Parking Lights Volts 6-8, C.P. 5

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 **Speed**
Regulation Volt., Current **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 9° B.T.C.

Engine **Bore** 3⅛″ **Stroke** 4¼″ **Taxable H.P.** 31.25
Piston Ring—Width Oil 1—⅛″, 1—³⁄₁₆″, Comp. 2—⅛″
Diam. 3⅛″ **Gap** .010″ on all
Oiling—Type Pump, Gear **Capacity** 7 Qts., 30 Lbs. at 20 **M.P.H.**

Valves **Intake Timing—Open** 20° B.T.C. **Close** 74° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Carter 465S

Cooling System Centrifugal **Type** Pump, Shaft **Capacity** 18½ Qts.

Steering **Camber** ¼° to ¾° **Caster** 0° to −½° **Toe-in** ¹⁄₃₂″ to ³⁄₃₂″

Clutch Borg **Facings** Woven, 6″ x 10″ x ⅛″

Gear Ratio Ring 41, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 24″ x 2¼″ x ³⁄₁₆″ **Clearance** .010″
Rear 24″ x 2¼″ x ³⁄₁₆″ **Clearance** .010″
Hand Rear Service
Lining Woven and Moulded

Nash **Model Ambassador 6** **Year 1940** **Series 4020**

Battery U.S.L. **Type** 15-Plate **Volts** 6 **Amps.** 105
Frame Connection

Lighting **Head Lights** Sealed Beam
Dash, Tail and Stop Volts 6-8, C.P. 1½, C.P. 3-21
Parking Lights Volts 6-8, C.P. 3

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed**
Regulation Volt., Current **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 6° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4⅜″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″, Comp. 2—⅛″
Diam. 3⅜″ **Gap.** 010″ on all
Oiling—Type Pump, Gear **Capacity** 6 Qts., 30 Lbs. at 20 M.P.H.

Valves **Intake Timing—Open** 24½° B.T.C. **Close** 70½° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 49½° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Carter 435S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17½ Qts.

Steering **Camber** ¼° to ¾° **Caster** 0° to −½° **Toe-in** 1/32″ to 3/32″

Clutch Borg **Facings** Woven, 6″ x 10″ x ⅛″

Gear Ratio Ring 41, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22″ x 2″ x 3/16″ **Clearance** .010″
- **Rear** 22″ x 2″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Woven and Moulded

Nash-LaFayette **Model** 6-Cylinder **Year** 1940 **Series** 4010

Battery U.S.L. **Type** 15-Plate **Volts** 6 **Amps.** 95
Frame Connection Positive

Lighting **Head Lights** Sealed Beam
Dash, Tail and Stop Volts 6-8, C.P. 1½, C.P. 3-21
Parking Lights Volts 6-8, C.P. 3

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed**
Regulation Volt., Current **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 18 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3⅜″ **Stroke** 4⅜″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″, Comp. 2—⅛″
Diam. 3⅜″ **Gap** .010″ on all
Oiling—Type Pump **Capacity** 6 Qts., 30 Lbs. at 20 M.P.H.

Valves **Intake Timing—Open** 21½° B.T.C. **Close** 71° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 71° B.B.C. **Close** 36½° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Carter 458S

Cooling System Centrifugal **Type** Pump, Shaft **Capacity** 19 Qts.

Steering **Camber** ¼° to ¾° **Caster** 0° to ½° **Toe-in** 1/32″ to 3/32″

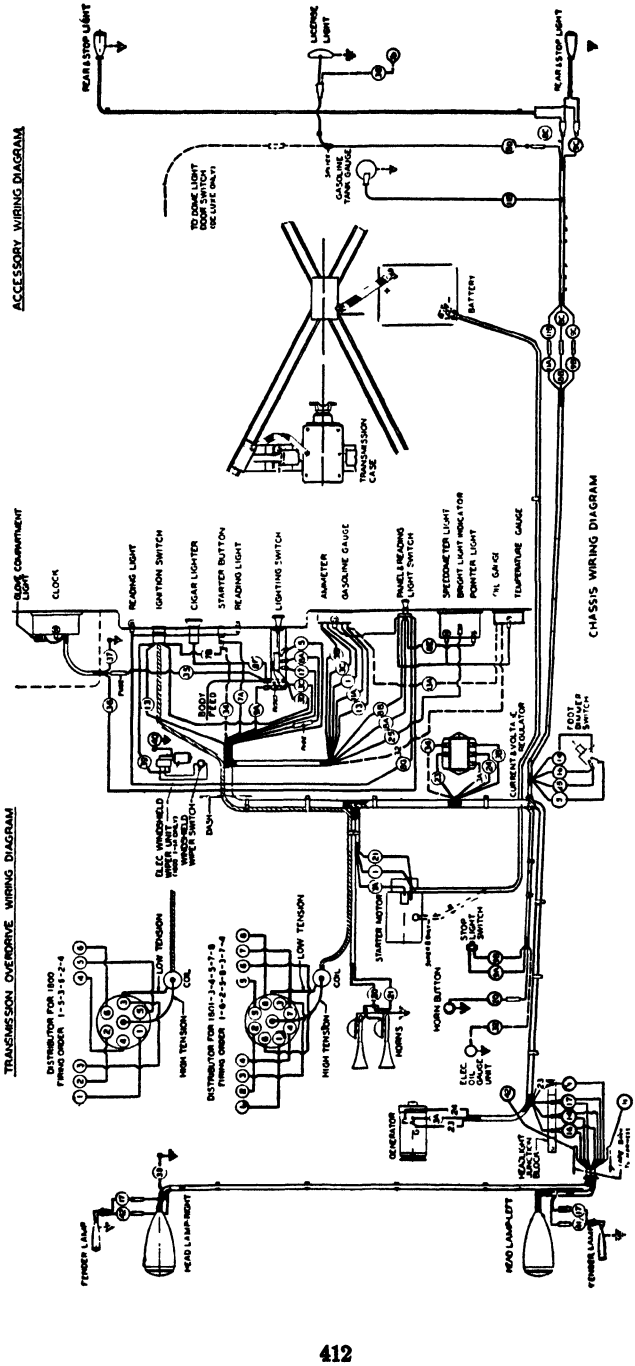
Clutch Borg **Facings** Woven, 5⅝″ x 9¼″ x ⅛″

Gear Ratio Ring 41, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22″ x 2″ x 3/16″ **Clearance** .010″
- **Rear** 22″ x 2″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Woven and Moulded



PACKARD WIRING DIAGRAM, 1940, SERIES 1800 1-10, 1-20
Courtesy of Packard Motor Car Company

Packard Model 6-Cylinder Year 1940 Series 1800, 1-10, 1-20

Battery Prest-O-Lite **Type** 15-Plate **Volts** 6 **Amps.** 95
Frame Connection Positive

Lighting **Head Lights** Sealed Beam 35-45 Watts
Dash, Tail and Stop Mazda Volts 6-8, 55 C.P. 1½, 1158 C.P. 3-21
Parking Lights Mazda Volts 6-8, 58 C.P. 21-3

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed**
Regulation Volt., Current **Cut-in** 6.4 Volts, 7 M.P.H.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 10 M.M. **Gap** .028″
Firing Order 1-5-3-6-2-4
Timing 4½° to 6° B.T.C.

Engine **Bore** 3½″ **Stroke** 4¼″ **Taxable H.P.** 29.4
Piston Ring—Width Oil 1—3/16″, Comp. 2—⅛″
Diam. 3½″ **Gap** Top and 2nd .0025″ to .003″, Oil .0015″ to .002″
Oiling—Type Pump, Gear **Capacity** 5 Qts., 45 Lbs. at 45 M.P.H.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 39° A.B.C.
Intake Clearance .007″ Warm
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .010″ Warm

Carburetor Stromberg BXOV-26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Steering **Camber** ½°−0+¾° **Caster** 1½°+0−½° **Toe-in** Zero

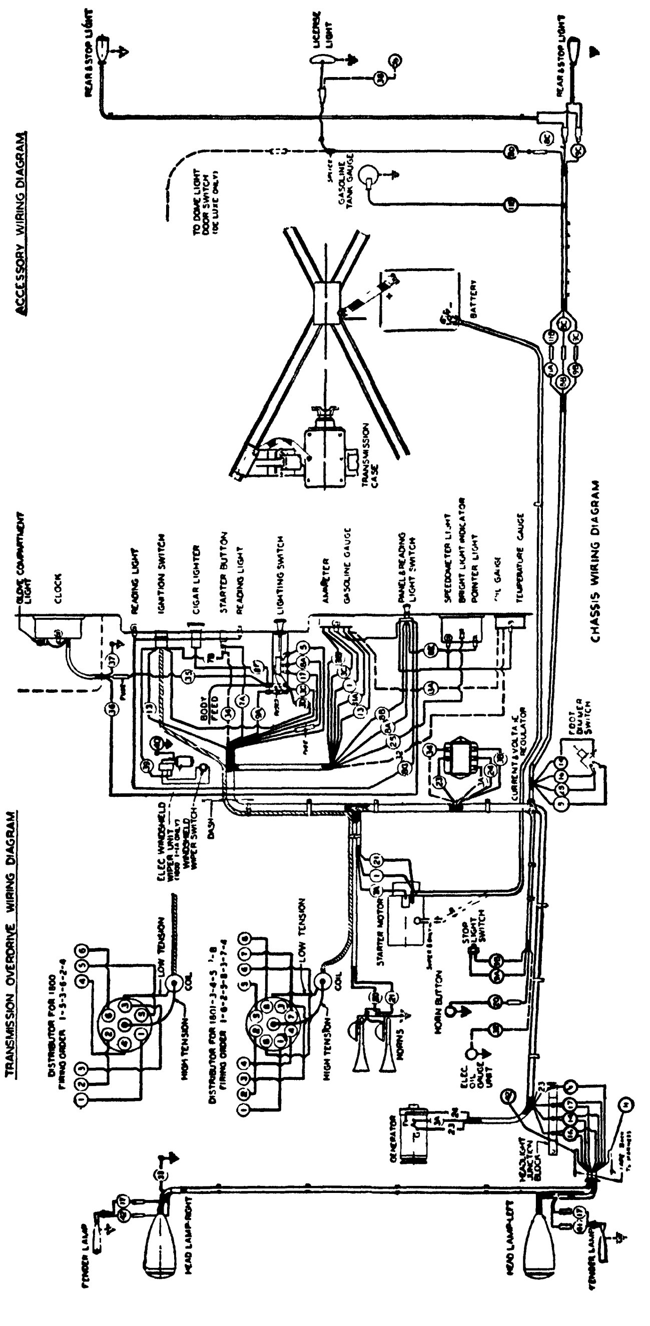
Clutch Long **Facings** Woven, 6″ x 9½″ x ⅛″

Gear Ratio Ring 43, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22⅝″ x 1¾″ x 3/16″ **Clearance** **Toe** **Heel**
- **Rear** 22⅝″ x 1¾″ x 3/16″ **Clearance** **Toe** **Heel**
- **Hand** Rear Service

Lining Moulded



PACKARD WIRING DIAGRAM, 1940, SERIES 1801, 1-10, 1-20

Courtesy of Packard Motor Car Company

Packard Model 8-Cylinder Year 1940 Series 1801, 1-10, 1-20

Battery Willard **Type** 17-Plate **Volts** 6 **Amps.** 114
Frame Connection Positive

Lighting **Head Lights** Sealed Beam 1801 30-40
Dash, Tail and Stop Mazda Volts 6-8, 55 C.P. 1½, 1158 C.P. 3-21
Parking Lights Mazda Volts 6-8, 58 C.P. 21-3

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed**
Regulation Volt., Current **Cut-in** 6.4 Volts, 7 M.P.H.
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .015″
Spark Plug—Size 10 M.M. **Gap** .028″
Firing Order 1-6-2-5-8-3-7-4
Timing Std. Head 6½° to 8° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4¼″ **Taxable H.P.** 33.8
Piston Ring—Width Oil 1—³⁄₁₆″, Comp. 2—⅛″
Diam. 3¼″ **Gap** Top and 2nd .0025″ to .003″,
Oil .0015″ to .002″
Oiling—Type Pump, Gear **Capacity** 6 Qts., 45 Lbs. at 45 M.P.H.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 39° A.B.C.
Intake Clearance .007″ Warm
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .010″ Warm

Carburetor Stromberg EE-16

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts.

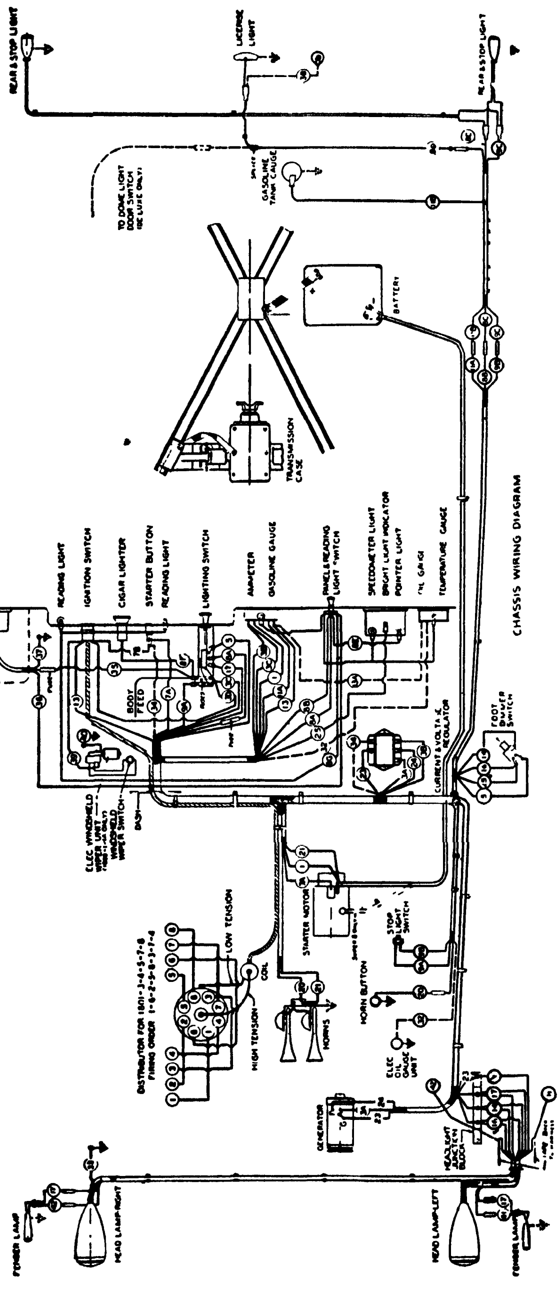
Steering **Camber** ½°−0+¾° **Caster** ½°+0−½° **Toe-in** Zero

Clutch Long **Facings** Woven, 6″ x 10″ x ⅛″

Gear Ratio Ring 45, Pinion 11 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 24½″ x 1¾″ x ³⁄₁₆″ **Clearance** **Toe** **Heel**
Rear 24½″ x 1¾″ x ³⁄₁₆″ **Clearance** **Toe** **Heel**
Hand Rear Service
Lining Moulded



PACKARD WIRING DIAGRAM, 1940, SERIES 1803 TO 1808 SUPER-EIGHT 1-60, 1-80
Courtesy of Packard Motor Car Company

Packard **Model 8-Cylinder** **Year 1940** **Series 1803 to 1808**
Super-Eight 1-60, 1-80

Battery **Type** **Volts** **Amps.**
Frame Connection Positive

Lighting **Head Lights** Sealed Beam 30-40 Watts
Dash, Tail and Stop Mazda Volts 6-8, 55 C.P. 1½, 1158 C.P. 3-21
Parking Lights Mazda Volts 6-8, 55 C.P. 1½

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed**
Regulation Volt., Current **Cut-in** 6.4 Volts, 7 M.P.H.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .015″
Spark Plug—Size AC-104 10 M.M. **Gap** .028″
Firing Order 1-6-2-5-8-3-7-4
Timing Stand. Head 3½° to 5° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4⅝″ **Taxable H.P.** 39.2
Piston Ring—Width Oil 1—5/32″, 1—⅛″, Comp. 1—3/16″
Diam. 3¼″ **Gap** Top and 2nd .0025″ to .003″,
Oil .0015″ to .002″
Oiling—Type Pump, Gear **Capacity** 7½ Qts., 50 Lbs. at 45 M.P.H.

Valves **Intake Timing—Open** 4° B.T.C. **Close** 51° A.B.C.
Intake Clearance Automatic Take-up
Exhaust Timing—Open 49° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Automatic Take-up

Carburetor Stromberg AAV-26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20 Qts.

Steering **Camber** ½° **Caster** −½° **Toe-in** Zero

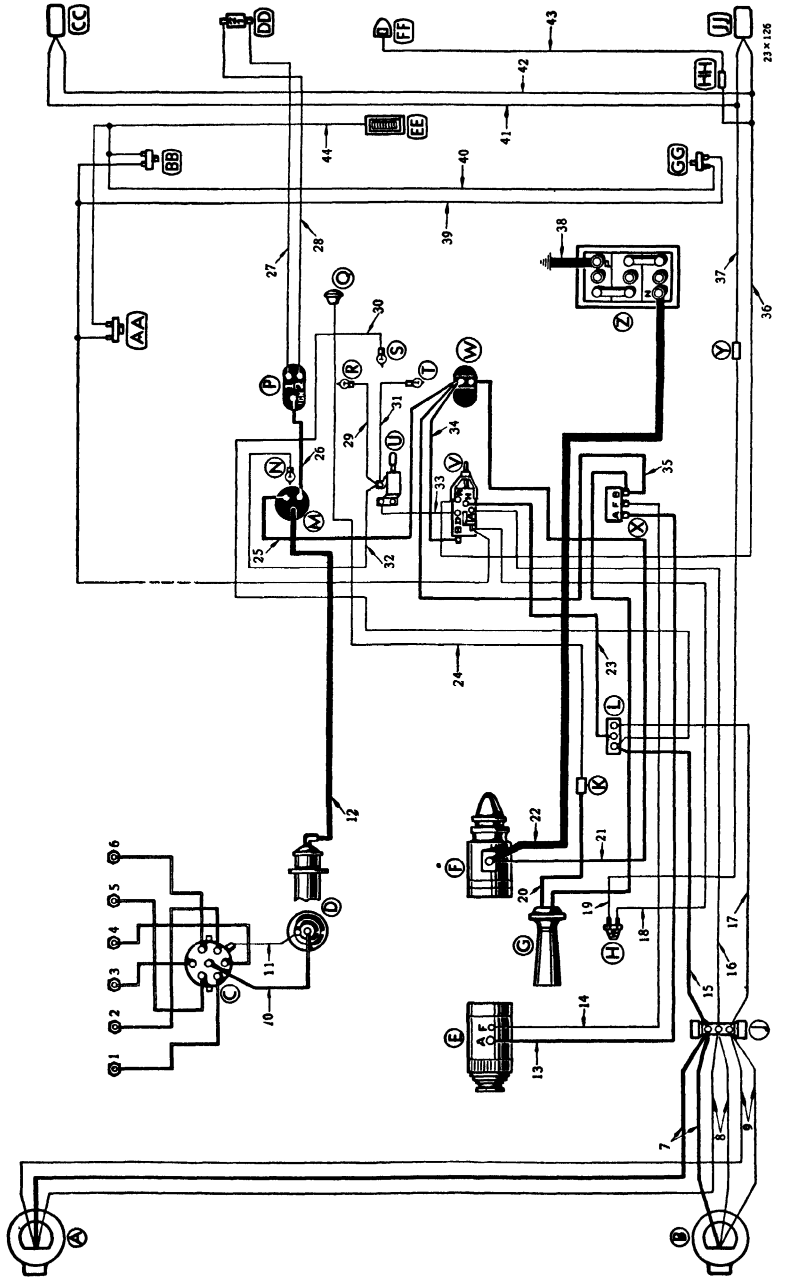
Clutch Long **Facings** Woven, 6½″ x 11″ x ⅛″

Gear Ratio Ring 47, Pinion 12 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 24½″ x 2¼″ x 3/16″ **Clearance** **Toe** **Heel**
- **Rear** 24½″ x 2¼″ x 3/16″ **Clearance** **Toe** **Heel**
- **Hand** Rear Service

Lining Moulded



PLYMOUTH WIRING DIAGRAM, 1940, SERIES P9-P10
Courtesy of Chrysler Corporation

Plymouth **Model 6-Cylinder** **Year 1940** **Series P9-P10**

Battery Auto-Lite **Type** 13-Plate **Volts** 6 **Amps.** 90
Frame Connection Positive

Lighting **Head Lights** Sealed Beam 45-35 Watts
Dash, Tail and Stop Mazda Volts 6-8; 55, C.P. $1\frac{1}{2}$, 1158, C.P. 3-21
Parking Lights Mazda Volts 6-8, 55, C.P. $1\frac{1}{2}$

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed** 2200 R.P.M.
Regulation Volt., Current **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** $3\frac{1}{8}$″ **Stroke** $4\frac{3}{8}$″ **Taxable H.P.** 23.44
Piston Ring—Width Oil 2—$\frac{5}{32}$″, Comp. 2—$\frac{1}{8}$″
Diam. $3\frac{1}{8}$″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts., 30 to 45 Lbs. at 20 M.P.H

Valves **Intake Timing—Open** 6° A.T.C. **Close** 46° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 42° B.B.C. **Close** 8° A.T.C.
Exhaust Clearance .006″ Hot

Carburetor Carter Ball and Ball D6-A-2

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 14 Qts.

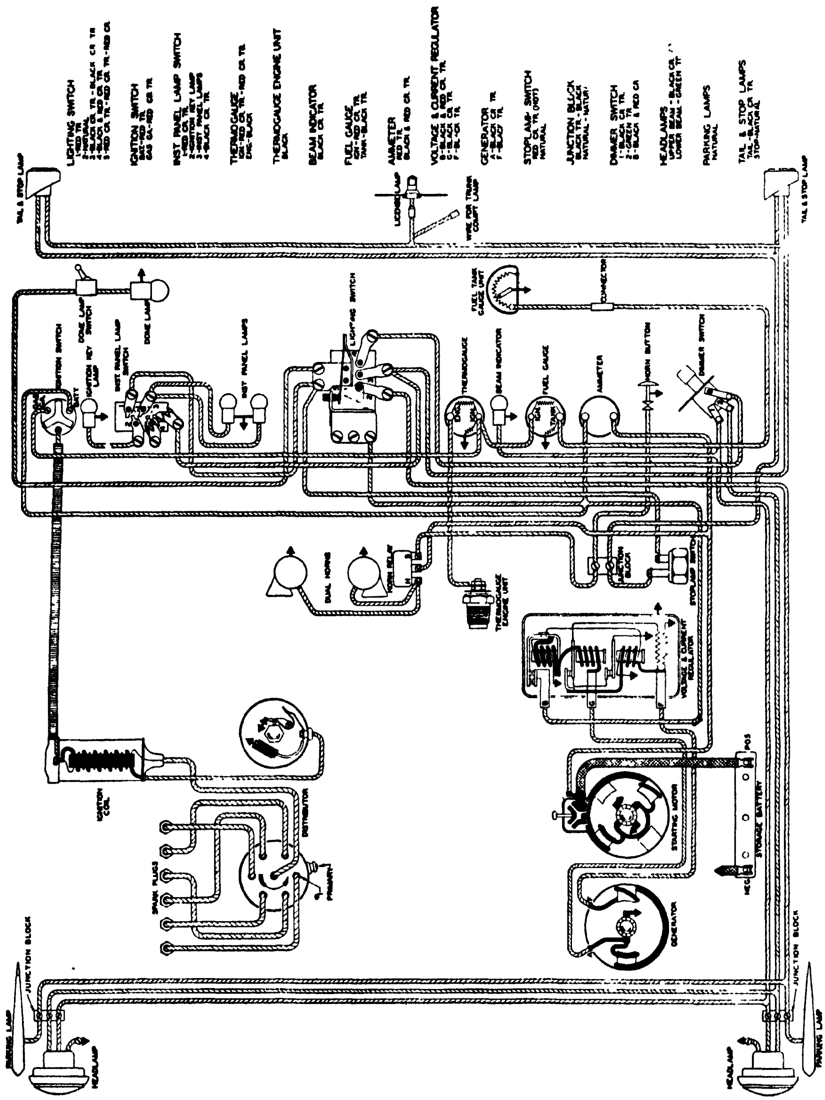
Steering **Camber** $+\frac{1}{4}°$ **Caster** $-1°$ to $+1°$ **Toe-in** $\frac{1}{16}$″

Clutch Borg **Facings** Woven, 6″ x $9\frac{1}{4}$″ x $\frac{1}{8}$″

Gear Ratio Ring 30, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front 18″ x 2″ x $1\frac{3}{16}$″ **Clearance** **Toe** .012″ **Heel** .006″
Rear 18″ x 2″ x $1\frac{3}{16}$″ **Clearance** **Toe** .012″ **Heel** .006″
Hand $17\frac{1}{16}$″ x 2″ x $\frac{5}{32}$″ **Clearance** .015″, Trans.
Lining Moulded



PONTIAC WIRING DIAGRAM, 1940, MODEL 6-CYLINDER
Courtesy of Pontiac Motor Company

Pontiac **Model 6-Cylinder** **Year 1940** **Series**

Battery Delco **Type** 15E1-W **Volts** 6 **Amps.** 100

Frame Connection Negative

Lighting **Head Lights** Sealed Beam

Dash, Tail and Stop Volts 6-8, 55 C.P. $1\frac{1}{2}$, 1154 C.P. 3-21

Parking Lights Volts 6-8, 63 C.P. 3

Starter and Generator Delco-Remy

Generator Cold **Max. Chg. Rate** 30 Amps. **Speed** 1700 R.P.M.

Regulation Volt., Current **Cut-in** 6.3 to 6.9 Volts

Relay Air Gap .020″ **Contact Gap**

Ignition Delco **Contact Breaker Gap** .020″

Spark Plug—Size A.C. 45 **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 2° B.T.C.

Engine **Bore** $3\frac{7}{16}$″ **Stroke** 4″ **Taxable H.P.** 28.3

Piston Ring—Width Oil 1—$\frac{3}{16}$″, Comp. 2—$\frac{3}{32}$″

Diam. $3\frac{7}{16}$″ **Gap** .009″ to .014″

Oiling—Type Pump, Gear **Capacity** 6 Qts., 40 Lbs. at 40 M.P.H.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.

Intake Clearance .011″ to .013″ Hot

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .011″ to .013″ Hot

Carburetor Carter 463S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Steering **Camber** 0° to $\frac{5}{8}$° **Caster** $-\frac{1}{2}$° to -1° **Toe-in** 0″ to $\frac{1}{16}$″

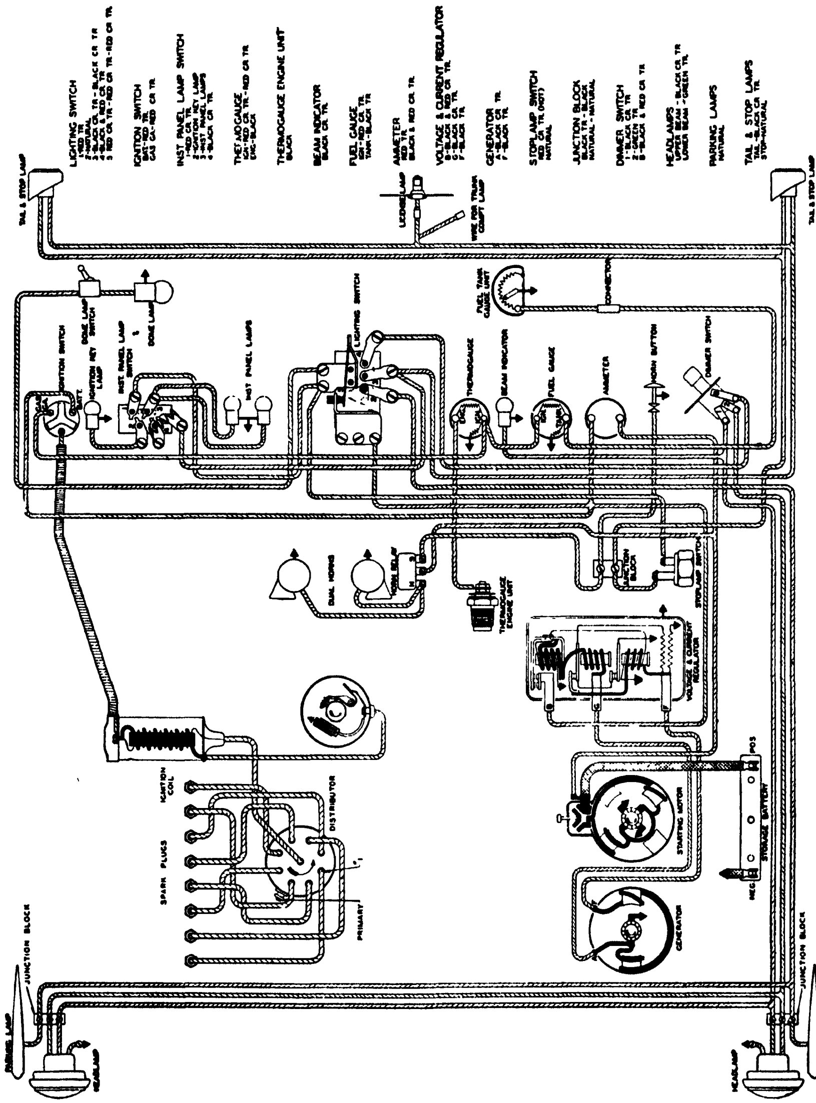
Clutch Inland **Facings** Moulded, $5\frac{3}{4}$″ x 9″ x $\frac{1}{8}$″

Gear Ratio Ring 43, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** $21\frac{5}{16}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″ **Clearance** **Toe** **Heel**
- **Rear** $21\frac{5}{16}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″ **Clearance** **Toe** **Heel**
- **Hand** Rear Service

Lining Moulded



PONTIAC WIRING DIAGRAM, 1940, SERIES DE LUXE 8
Courtesy of Pontiac Motor Company

Pontiac **Model 8-Cylinder** **Year 1940** **Series De Luxe 8**

Battery Delco **Type** 15E1-W **Volts** 6 **Amps.** 100

Frame Connection Negative

Lighting **Head Lights** Sealed Beam

Dash, Tail and Stop Volts 6-8, 55 C.P. 1½, 1154 C.P. 3-21

Parking Lights Volts 6-8, 63 C.P. 3

Starter and Generator Delco-Remy

Generator Cold **Max. Chg. Rate** 30 Amps. **Speed** 1700 R.P.M.

Regulation Volt., Current **Cut-in** 6.3 to 6.9 Volts

Relay Air Gap .020″ **Contact Gap**

Ignition Delco **Contact Breaker Gap** .015″

Spark Plug—Size A.C. 45 **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing 2° B.T.C.

Engine **Bore** 3¼″ **Stroke** 3¾″ **Taxable H.P.** 33.8

Piston Ring—Width Oil 1 Comp. 2

Diam. 3¼″ **Gap** .009″ to .014″

Oiling—Type Pump, Gear **Capacity** 6 Qts., 40 Lbs. at 40 M.P.H.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.

Intake Clearance .011″ to .013″ Hot

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .011″ to .013″ Hot

Carburetor Carter 462-S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 19 Qts.

Steering **Camber** 0° to ⅝° **Caster** −½° to −1° **Toe-in** 1/16″

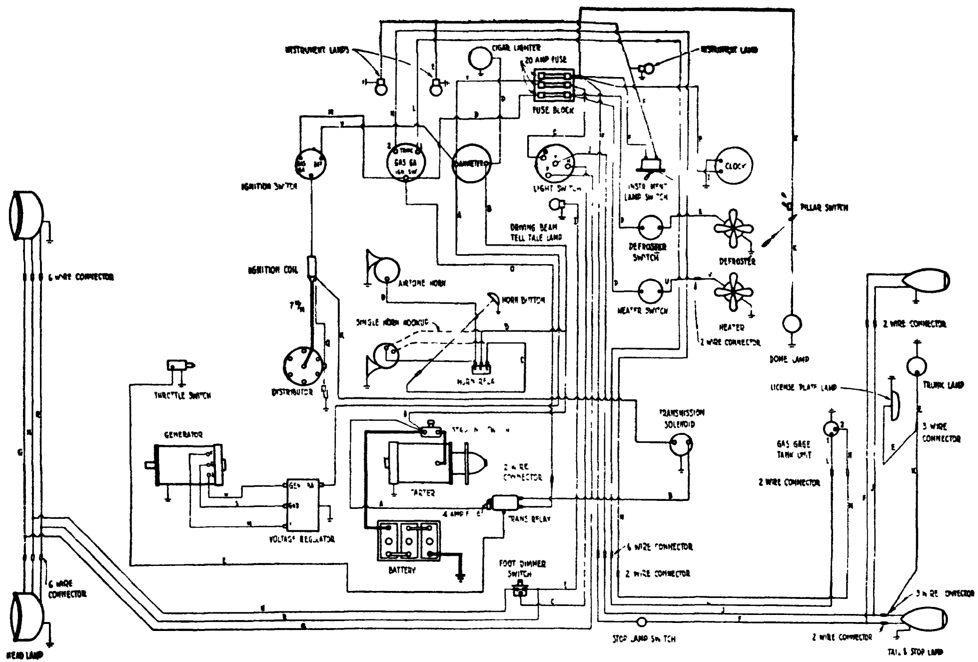
Clutch Inland **Facings** 5¾″ x 9¼″ x ⅛″

Gear Ratio Ring 43, Pinion 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 2 15/16″ x 1¾″ x 3/16″ **Clearance** **Toe** **Heel**
- **Rear** 2 15/16″ x 1¾″ x 3/16″ **Clearance** **Toe** **Heel**
- **Hand** Rear Service

Lining Moulded



CODE LETTER	WIRE COLOR	CODE LETTER	WIRE COLOR	CODE LETTER	WIRE COLOR
A	#10 BLACK	H	#14 YELLOW	P	#16 WHITE & RED
B	#10 RED	I	#16 WHITE	Q	#16 BLACK & GREEN
C	#14 RED & BLACK	J	#16 BLACK & OAK	R	#4 RED
D	#14 BLACK	K	#16 WHITE & BLACK	S	#14 WHITE & RED
E	#16 BLACK	L	#8 BLACK & RED	T	#16 SILVER
F	#16 RED	M	#16 WHITE & BLACK	U	#12 BLUE
G	#16 GREEN	N	#8 BLACK	V	#12 BLACK
		O	#16 YELLOW & RED	W	#10 WHITE

STUDEBAKER WIRING DIAGRAM, 1939 AND 1940, SERIES G

Courtesy of Studebaker Corporation

Studebaker **Model** Champion **Year** 1939-1940 **Series** G

Battery Willard **Type** 13-Plate **Volts** 6 **Amps.** 90

Frame Connection Positive

Lighting **Head Lights** Sealed Beam

Dash, Tail and Stop Mazda Volts 6-8, 55 C.P. $1\frac{1}{2}$, 1158 C.P. 3-21

Parking Lights Mazda Volts 6-8, 55 C.P. $1\frac{1}{2}$

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed** 1800 R.P.M.

Regulation Volt., Current **Cut-in** 6.4 Volts, 8.6 M.P.H.

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size Champion **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 1° B.T.C.

Engine **Bore** 3″ **Stroke** $3\frac{7}{8}$″ **Taxable H.P.** 21.60

Piston Ring—Width Oil 1—$\frac{5}{32}$″, Comp. 1—$\frac{1}{8}$″, 1—$\frac{3}{32}$″

Diam. 3″ **Gap** .007″ on all

Oiling—Type Pump, Gear **Capacity** 5 Qts., 40 Lbs. at 25 M.P.H.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.

Intake Clearance .016″ Cold

Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance .016″ Cold

Carburetor Carter 468-S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** $10\frac{1}{2}$ Qts.

Steering **Camber** $\frac{1}{2}$° **Caster** 1° **Toe-in** $\frac{1}{8}$″

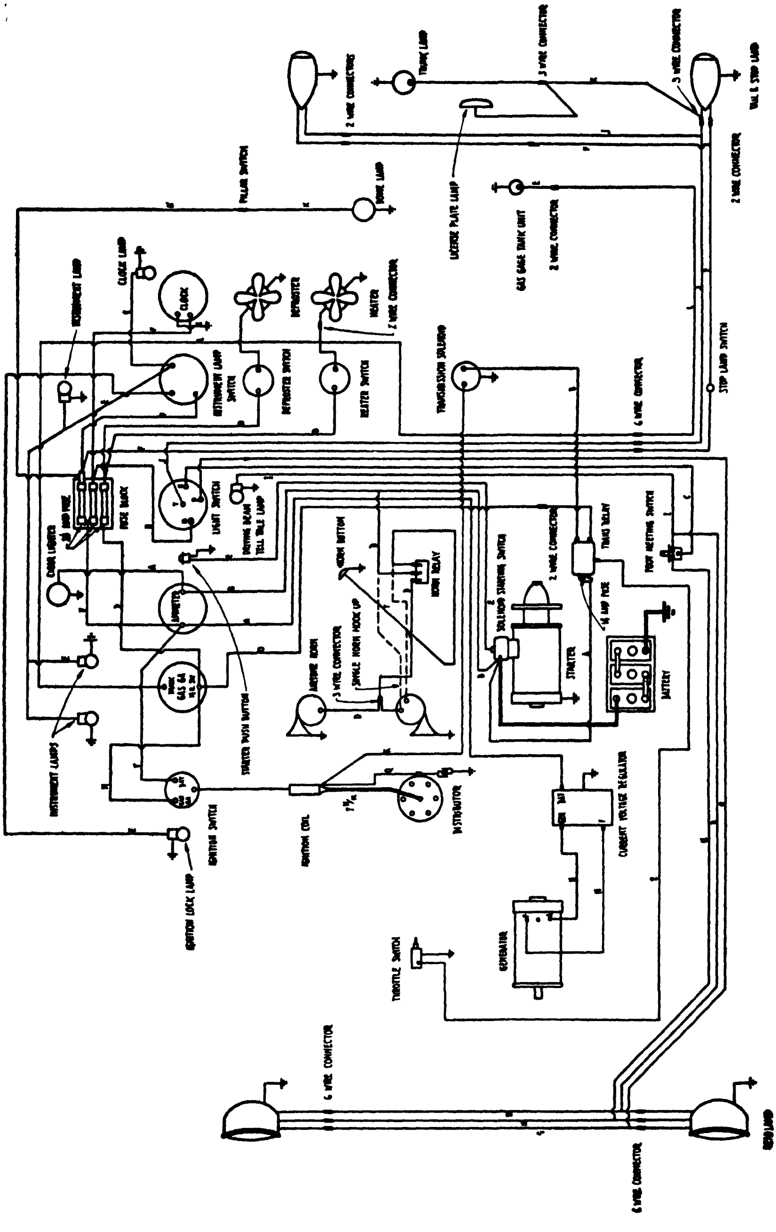
Clutch Borg **Facings** Moulded and Woven, $5\frac{1}{8}$″ x $7\frac{7}{8}$″ x $\frac{1}{8}$″

Gear Ratio Ring 41, Pinion 9 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** $17\frac{3}{4}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″ **Clearance** **Toe** .010″ **Heel** .015″
- **Rear** $17\frac{3}{4}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″ **Clearance** **Toe** .010″ **Heel** .015″
- **Hand** Rear Service

Lining Moulded and Woven



STUDEBAKER WIRING DIAGRAM, 1939 AND 1940, SERIES 10A, 6C
Courtesy of Studebaker Corporation

Studebaker **Model Commander** **Year 1940** **Series 10A**

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 95

Frame Connection Positive

Lighting **Head Lights** Sealed Beam

Dash, Tail and Stop Mazda Volts 6-8, 55 C.P. 1½, 1158 C.P. 2-21

Parking Lights Mazda Volts 6-8, 55 C.P. 1½

Starter and Generator Auto-Lite

Generator Hot **Max. Chg. Rate** 35 Amps. **Speed** 2000 R.P.M.

Regulation Volt., Current **Cut-in** 6.4 Volts, 7 M.P.H.

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size Champion **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 2° B.T.C.

Engine **Bore** 3 5/16″ **Stroke** 4⅜″ **Taxable H.P.** 26.33

Piston Ring—Width Oil 1—3/16″, Comp. 2—⅛″

Diam. 3 5/16″ **Gap** .007″ on all

Oiling—Type Pump, Gear **Capacity** 8 Qts., 60 Lbs. at 25 M.P.H.

Valves **Intake Timing—Open** 15° B.B.C. **Close** 49° A.B.C.

Intake Clearance .016″ Cold

Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance .016″ Cold

Carburetor Stromberg BXO26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 14½ Qts.

Steering **Camber** ½° **Caster** −¼° **Toe-in** ⅛″

Clutch Borg **Facings** Moulded and Woven, 6″ x 9¼″ x ⅛″

Gear Ratio Ring 50, Pinion 11 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic

- **Front** 19 11/16″ x 2″ x 3/16″ **Clearance Toe** .010″ **Heel** .015″
- **Rear** 19 11/16″ x 2″ x 3/16″ **Clearance Toe** .010″ **Heel** .015″
- **Hand** Rear Service

Lining Moulded and Woven

Studebaker **Model President** **Year 1940** **Series 6C**

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 95

Frame Connection Positive

Lighting **Head Lights** Sealed Beam

Dash, Tail and Stop Mazda Volts 6-8, 55 C.P. 1½, 1158 C.P. 2-21

Parking Lights Mazda Volts 6-8, 55 C.P. 1½

Starter and Generator Delco-Remy

Generator Hot **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.

Regulation Volt., Current **Cut-in** 6.3 Volts, 9.7 M.P.H.

Relay Air Gap **Contact Gap**

Ignition Delco **Contact Breaker Gap** .020″

Spark Plug—Size Champion **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing D.C.

Engine **Bore** 3$\frac{1}{16}$″ **Stroke** 4¼″ **Taxable H.P.** 30.01

Piston Ring—Width Oil 1—$\frac{3}{16}$″, Comp. 2—⅛″

Diam. 3$\frac{1}{16}$″ **Gap** .013″ on all

Oiling—Type Pump, Gear **Capacity** 8 Qts., 60 Lbs. at 25 M.P.H.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.

Intake Clearance .016″ Cold

Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance .016″ Cold

Carburetor Stromberg AA0161

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Steering **Camber** ½° **Caster** −¼° **Toe-in** ⅛″

Clutch Inland **Facings** Moulded, 6″ x 9½″ x ⅛″

Gear Ratio Ring 50, Pinion 11 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 19$\frac{11}{16}$″ x 2¼″ x $\frac{3}{16}$″ **Clearance** **Toe** .010″ **Heel** .015″
- **Rear** 19$\frac{11}{16}$″ x 2¼″ x $\frac{3}{16}$″ **Clearance** **Toe** .010″ **Heel** .015″
- **Hand** Rear Service

Lining Moulded and Woven

Index Wiring Diagrams and Data Sheets for 1941 Cars

WIRING DIAGRAMS AND DATA SHEETS

CHART OF ABBREVIATIONS

GENERAL

Amps.—Amperes
V.—Volts
C.P.—Candle Power
R.& L. of Firing Order—Right and left determined from driver's seat
Max. Chg. Rate—Maximum Charging Rate
R.P.M.—Revolutions per Minute
D.C.—Double Contact
MM.—Millimeters
Side Lights—Side or Parking Lights
Air Gap—Contacts Closed
Oil—Oil Ring
Comp.—Compression Ring

IGNITION AND VALVE TIMING

B.T.D.C. or B.T.C.—Before Top Dead Center
B.B.D.C. or B.B.C.—Before Bottom Dead Center
A.B.D.C. or A.B.C.—After Bottom Dead Center
A.T.D.C. or A.T.C.—After Top Dead Center
T.D.C. at Retard—Top Dead Center; Spark Control Retarded
12° past T.D.C.—Piston 12° past T.D.C. Spark Control Retarded
2½" before T.D.C.—Piston 2½", on Flywheel, before T.D.C.
"Ret" at Retard—Marks "Ret" on Flywheel

LUBRICATION SYSTEM

Gals.—Gallons
Qts.—Quarts
Press.—Pressure to Main Bearings
Splash—Pressure Circulating Splash
Splash—Connecting Rod Dips

REAR AXLE

Semi—Semi-Floating
¾ Flt.—Three-quarters Floating
Full Flt.—Full Floating

CLUTCH

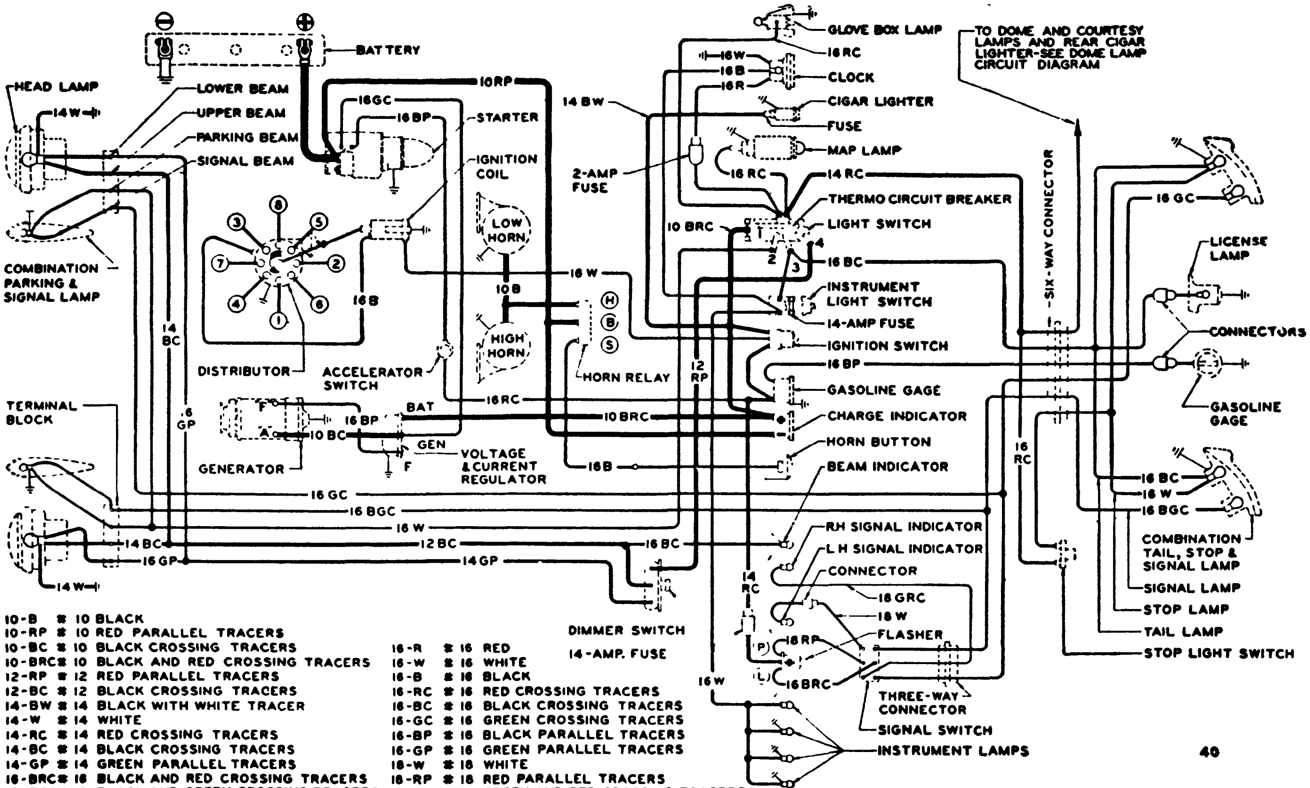
Disc.—Multiple disc, either wet or dry
Plate—Single or Double Plate Type

BRAKES

Front—Front Wheels
Rear—Rear Wheels
Hand—Hand Brake
Trans.—Transmission Brake

INDEX

1941 Wiring Diagrams and Data Sheets



10-B # 10 BLACK
10-RP # 10 RED PARALLEL TRACERS
10-BC # 10 BLACK CROSSING TRACERS
10-BRC# 10 BLACK AND RED CROSSING TRACERS
12-RP # 12 RED PARALLEL TRACERS
12-BC # 12 BLACK CROSSING TRACERS
14-BW # 14 BLACK WITH WHITE TRACER
14-W # 14 WHITE
14-RC # 14 RED CROSSING TRACERS
14-BC # 14 BLACK CROSSING TRACERS
14-GP # 14 GREEN PARALLEL TRACERS
16-BRC# 16 BLACK AND RED CROSSING TRACERS
16-BGC# 16 BLACK AND GREEN CROSSING TRACERS

16-R # 16 RED
16-W # 16 WHITE
16-B # 16 BLACK
16-RC # 16 RED CROSSING TRACERS
16-BC # 16 BLACK CROSSING TRACERS
16-GC # 16 GREEN CROSSING TRACERS
16-BP # 16 BLACK PARALLEL TRACERS
16-GP # 16 GREEN PARALLEL TRACERS
18-W # 18 WHITE
18-RP # 18 RED PARALLEL TRACERS
18-GRC # 18 GREEN AND RED CROSSING TRACERS

BUICK WIRING DIAGRAM, 1942, SERIES 40

Courtesy of Buick Motor Division, G. M. S. C.

Buick **Model** 8-Cylinder **Year** 1941 **Series** 40-50

Battery Delco-Remy **Type** 17-Plate, 17E-2-W **Volts** 6 **Amps.** 120

Frame Connection Negative

Lighting **Head Lights** 45-35 Watts, Sealed Beam, 6-8 Volts

Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1.5 C.P., 6-8 Volts

Parking Lights As in head lights

Starter and Generator Delco-Remy

Generator Delco **Max. Chg. Rate** 32-34 Hot **Speed** 2400 R.P.M.

Regulation Volt. and Current **Cut-in** 6.2 Volts

Relay Air Gap .018″-.022″ **Contact Gap** .015″-.025″

Ignition Remy **Contact Breaker Gap** .0125″-.0175″

Spark Plug—Size 10 M.M. **Gap** .023″-.028″

Firing Order 1-6-2-5-8-3-7-4

Timing 40–2° B.T.C., 50–4° B.T.C.

Engine **Bore** 3³⁄₃₂″ **Stroke** 4⅛″ **Taxable H.P.** 30.63

Piston Ring—Width Oil 2—³⁄₁₆″ Comp. 2—³⁄₃₂″

Diam. 3³⁄₃₂″ **Gap** .012″ on all

Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 13° B.T.C. **Close** 68° A.B.C.

Intake Clearance .015″ Hot

Exhaust Timing—Open 55° B.B.C. **Close** 22° A.T.C.

Exhaust Clearance .015″ Hot

Carburetor 40 Stromberg AAV16 or Carter 487S, 50 Stromberg AAV16 front, AA1 rear or Carter 509S front, 491S rear

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

Steering **Camber** 1⅛° **Caster** ⅜° **Toe-in** ¹⁄₃₂″

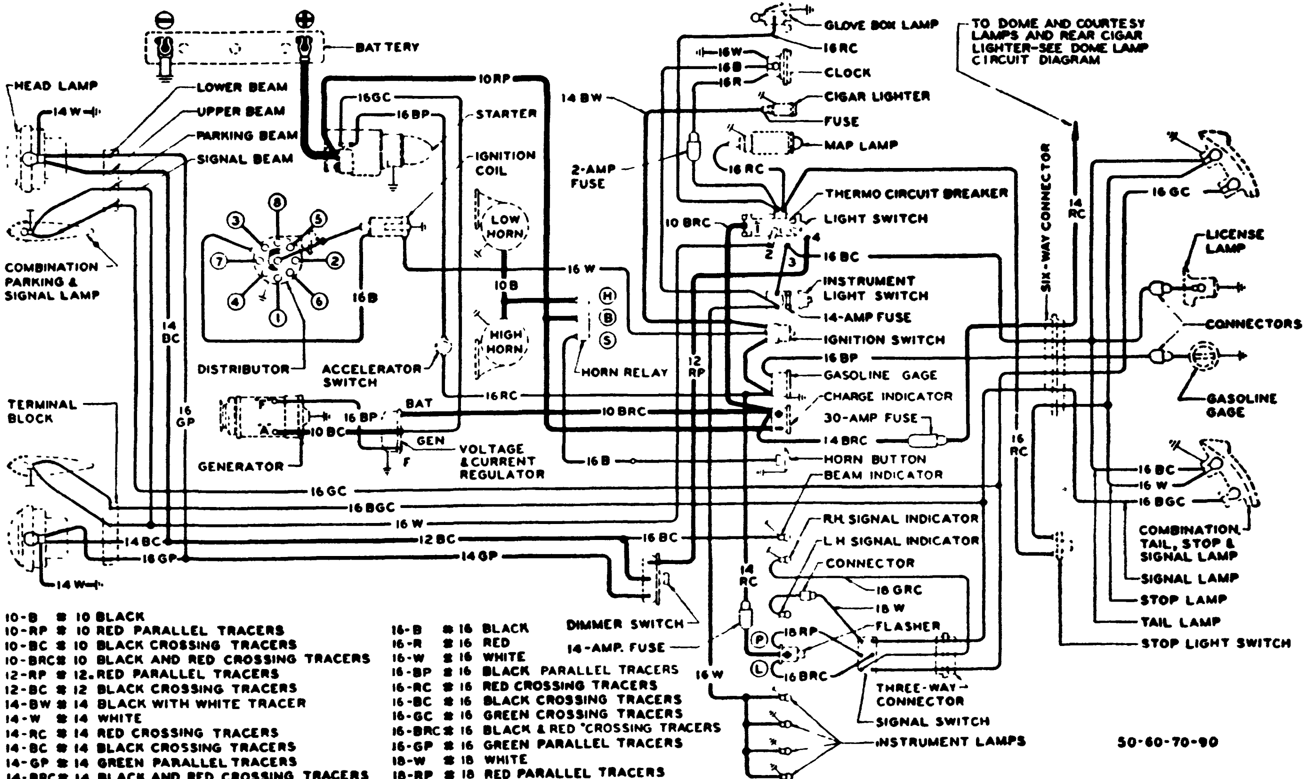
Clutch Borg **Facings** Woven, 6½″ x 10″ x ⅛″

Gear Ratio 44 to 10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22¹¹⁄₁₆″ x 1¾″ x ³⁄₁₆″ **Clearance** .015″
- **Rear** 22¹¹⁄₁₆″ x 1¾″ x ³⁄₁₆″ **Clearance** .015″
- **Hand** Rear Service

Lining Woven and Moulded



10-B	# 10	BLACK
10-RP	# 10	RED PARALLEL TRACERS
10-BC	# 10	BLACK CROSSING TRACERS
10-BRC	# 10	BLACK AND RED CROSSING TRACERS
12-RP	# 12.	RED PARALLEL TRACERS
12-BC	# 12	BLACK CROSSING TRACERS
14-BW	# 14	BLACK WITH WHITE TRACER
14-W	# 14	WHITE
14-RC	# 14	RED CROSSING TRACERS
14-BC	# 14	BLACK CROSSING TRACERS
14-GP	# 14	GREEN PARALLEL TRACERS
14-BRC	# 14	BLACK AND RED CROSSING TRACERS
16-BGC	# 16	BLACK AND GREEN CROSSING TRACERS

16-B	# 16	BLACK
16-R	# 16	RED
16-W	# 16	WHITE
16-BP	# 16	BLACK PARALLEL TRACERS
16-RC	# 16	RED CROSSING TRACERS
16-BC	# 16	BLACK CROSSING TRACERS
16-GC	# 16	GREEN CROSSING TRACERS
16-BRC	# 16	BLACK & RED CROSSING TRACERS
16-GP	# 16	GREEN PARALLEL TRACERS
18-W	# 18	WHITE
18-RP	# 18	RED PARALLEL TRACERS
18-GRC	# 18	GREEN AND RED CROSSING TRACERS

BUICK WIRING DIAGRAM, 1942, SERIES 50-60-70-90

Courtesy of Buick Motor Division, G. M. S. C.

Buick **Model 8-Cylinder** **Year 1941** **Series 60-70-90**

Battery Delco-Remy **Type** 17-Plate, 17 E-2-W **Volts** 6-8 **Amps.** 120
Frame Connection Negative

Lighting **Head Lights** 45-35 Watts, Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1.5 C.P., 6-8 Volts
Parking Lights As in head lights

Starter and Generator Delco-Remy

Generator Delco **Max. Chg. Rate** 32-34 Amps. **Speed** 2400 R.P.M.
Regulation Volt. and Current **Cut-in** 6.2 Volts
Relay Air Gap .010″-.013″ **Contact Gap** .025″-.045″

Ignition Remy **Contact Breaker Gap** .0125″-.0175″
Spark Plug—Size 10 M.M. **Gap** .023″-.028″
Firing Order 1-6-2-5-8-3-7-4
Timing 6° B.T.C.

Engine **Bore** $3\frac{7}{16}$″ **Stroke** $4\frac{5}{16}$″ **Taxable H.P.** 37.81
Piston Ring—Width Oil 2—$\frac{3}{16}$″ Comp. 2—$\frac{3}{32}$″
Diam. $3\frac{7}{16}$″ **Gap** .012 on all
Oiling—Type Gear, Pump **Capacity** 8 Qts.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Stromberg AAV16 front AA1 rear, or Carter 4905 front 4915 rear

Cooling System Centrifugal **Type** Pump, Belt **Cap.** 60-70, $16\frac{3}{4}$ Qts., 90–18 Qts.

Steering **Camber** $1\frac{1}{8}$° **Caster** $\frac{3}{8}$° **Toe-in** $\frac{1}{32}$″

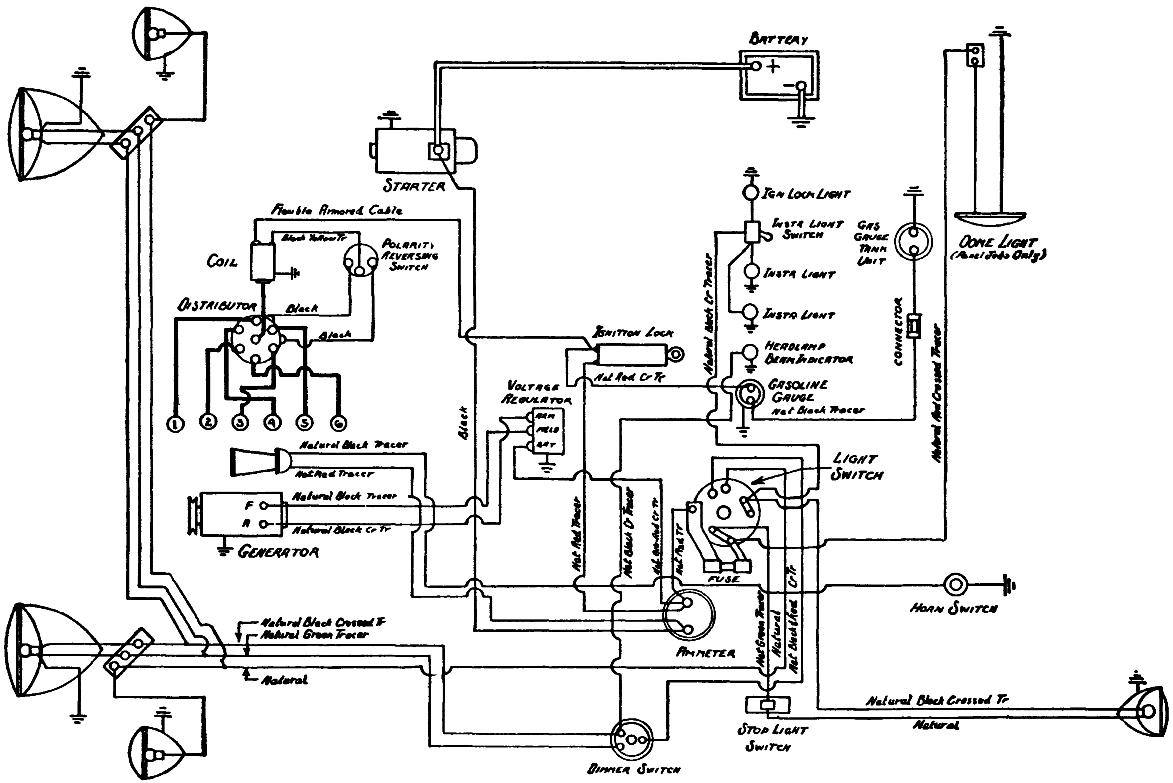
Clutch Borg **Facings** Woven, $6\frac{1}{2}$″ x $10\frac{1}{2}$″ x $\frac{1}{8}$″

Gear Ratio 60-70, 39 to 10, 90-46 to 11 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 60-70, $22\frac{15}{16}$″ x $2\frac{1}{4}$″ x $\frac{3}{16}$″ **Clearance** .015″
  90, $26\frac{13}{16}$″ x 2″ x $\frac{1}{4}$″
- **Rear** 60-70, $22\frac{15}{16}$″ x $2\frac{1}{4}$″ x $\frac{3}{16}$″ **Clearance** .015″
  90, $26\frac{13}{16}$″ x 2″ x $1\frac{1}{4}$″
- **Hand** Rear Service

Lining Woven and Moulded



CHEVROLET WIRING DIAGRAM, 1941, SERIES MASTER DL6

Courtesy of Chevrolet Motor Division, G. M. S. C.

Chevrolet **Model 6-Cylinder** **Year 1941** **Series Master DL6**

Battery Delco **Type** 15-Plate **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Head Lights**
Tail and Stop **Dash**
Parking Lights

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 34 Amps. **Speed** 2400 R.P.M.
Regulation Volt. and Current **Cut-in** 6.2 Volts
Relay Air Gap **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .018″
Spark Plug—Size 10 M.M. **Gap** .040″
Firing Order 1-5-3-6-2-4
Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 3¾″ **Taxable H.P.** 29.40
Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp. 2—⅛″
Diam. 3½″ **Gap** .005″ on all
Oiling—Type Pressure and Splash **Capacity** 5 Qts.

Valves **Intake Timing—Open** 3° B.T.C. **Close** 35° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 46° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .013″ Hot

Carburetor Carter 483S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 14 Qts.

Steering **Camber** —¼° **Caster** **Toe-in**

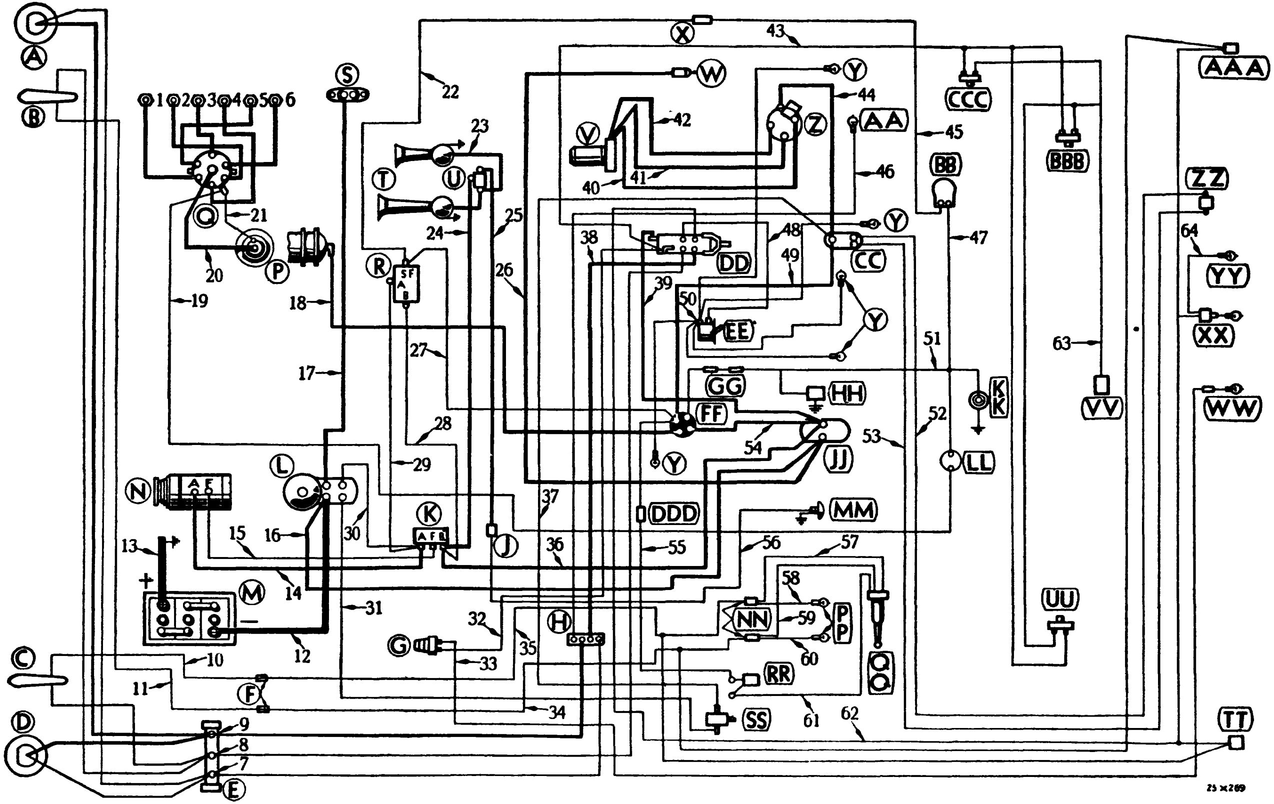
Clutch Inland **Facings** Woven, 6⅛″ x 9⅛″ x .132″

Gear Ratio 37-9 **Type** Hypoid

Axle Semi-Floating

Brakes Hydraulic
- **Front** 22⅝″ x 1¾″ x $\frac{3}{16}$″ **Clearance** Slight drag back
- **Rear** 22⅝″ x 1¾″ x $\frac{3}{16}$″ **Clearance** 4 notches
- **Hand** Rear Service

Lining Moulded



CHRYSLER WIRING DIAGRAM, 1941, (C28) SERIES ROYAL AND WINDSOR

Courtesy of Chrysler Corporation

Chrysler Model C28 Royal and Windsor Year 1941

Battery Willard **Type** 17-Plate **Volts** 6-8 **Amps.** 120
Frame Connection Positive

Lighting **Head Lights** 45-35 Watts, Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts
Parking Lights As in head lights

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed** 1800 to 2010 R.P.M.
Regulation Volt. and Current **Cut-in** 6.4 Volts, 1000-1080 Hot
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3⅜″ **Stroke** 4½″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** .007″ to .015″
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 12° B.T.C. **Close** 44° A.B.C. with Valve .014″
Intake Clearance .008″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 6 A.T.C. with Valve .014″
Exhaust Clearance .010″ Hot

Carburetor Carter Ball and Ball E6S2

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 4½ Gals.

Steering **Camber** +¼° **Caster** −1° to +1° **Toe-in** 1/16″

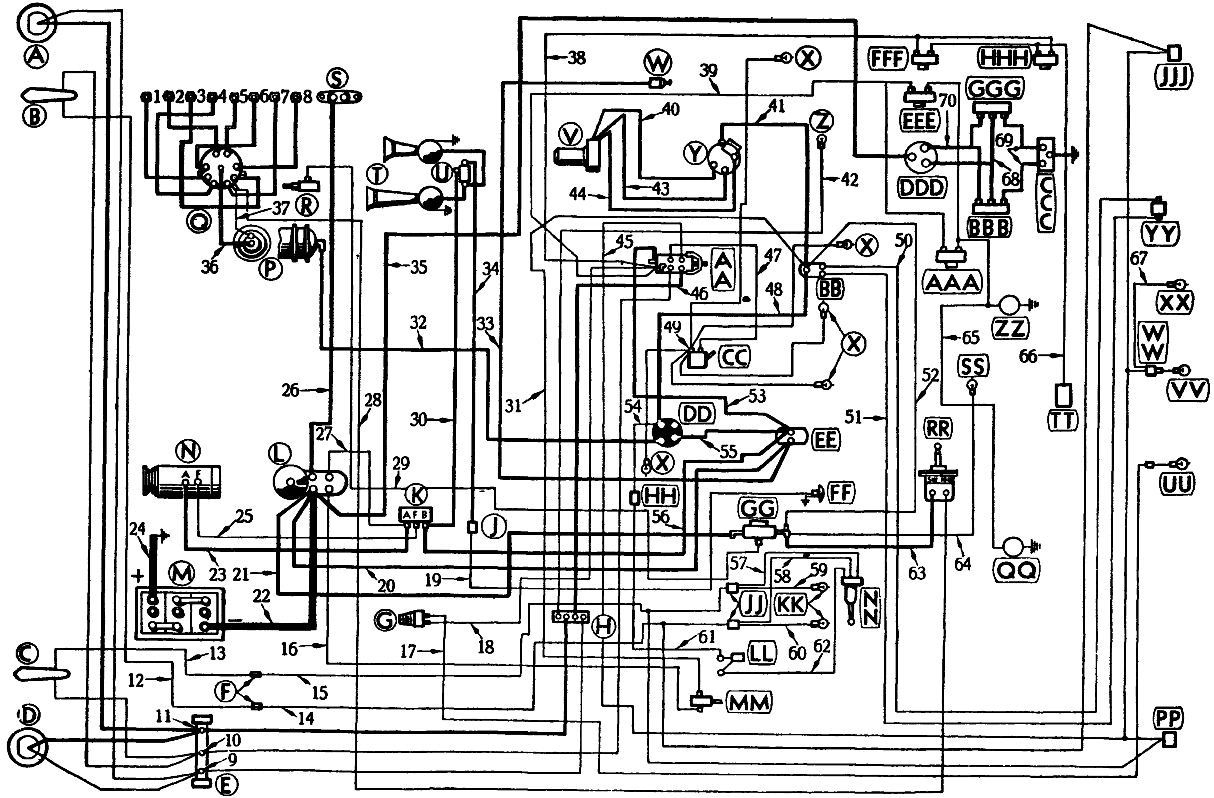
Clutch Borg **Facings** Woven, 6″ x 9¼″ x ⅛″

Gear Ratio 3.9 to 1 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front Shoe** 11 15/32″ x 2″ x 13/64″ **Clearance** **Toe** .012″ **Heel** .006″
- **Rear Shoe** 7 31/32″ x 2″ x 13/64″ **Clearance** **Toe** .012″ **Heel** .006″
- **Hand** 17 1/16″ x 2″ x 5/32″ **Clearance** .015″ to .020″

Lining Moulded



CHRYSLER WIRING DIAGRAM, 1941, (C30) SERIES NEW YORKER AND CROWN IMPERIAL

Courtesy of Chrysler Corporation

Chrysler Model C30 New Yorker, Crown Imperial Yr. 1941 Ser. C30

Battery Willard **Type** 19-Plate **Volts** 6 **Amps.** 135
Frame Connection Positive

Lighting **Head Lights** 45-35 Watts, Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts
Parking Lights As in head lights

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 34 Amps. **Speed** 2200 R.P.M.
Regulation Volt. and Current **Cut-in** 6.4 Volts, 820 R.P.M. Hot
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .018″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-2-6-5-8-3-7-4
Timing New Yorker T.D.C., Imperial 3° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4⅞″ **Taxable H.P.** 33.80
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3¼″ **Gap** .007″ to .015″ on all
Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 6° B.T.C. **Close** 50° A.B.C. with Valve .011″
Intake Clearance .008″ Hot
Exhaust Timing—Open 44° B.B.C. **Close** 12° A.T.C. with Valve .014″
Exhaust Clearance .010″ Hot

Carburetor Stromberg AAV2

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 6 Gals.

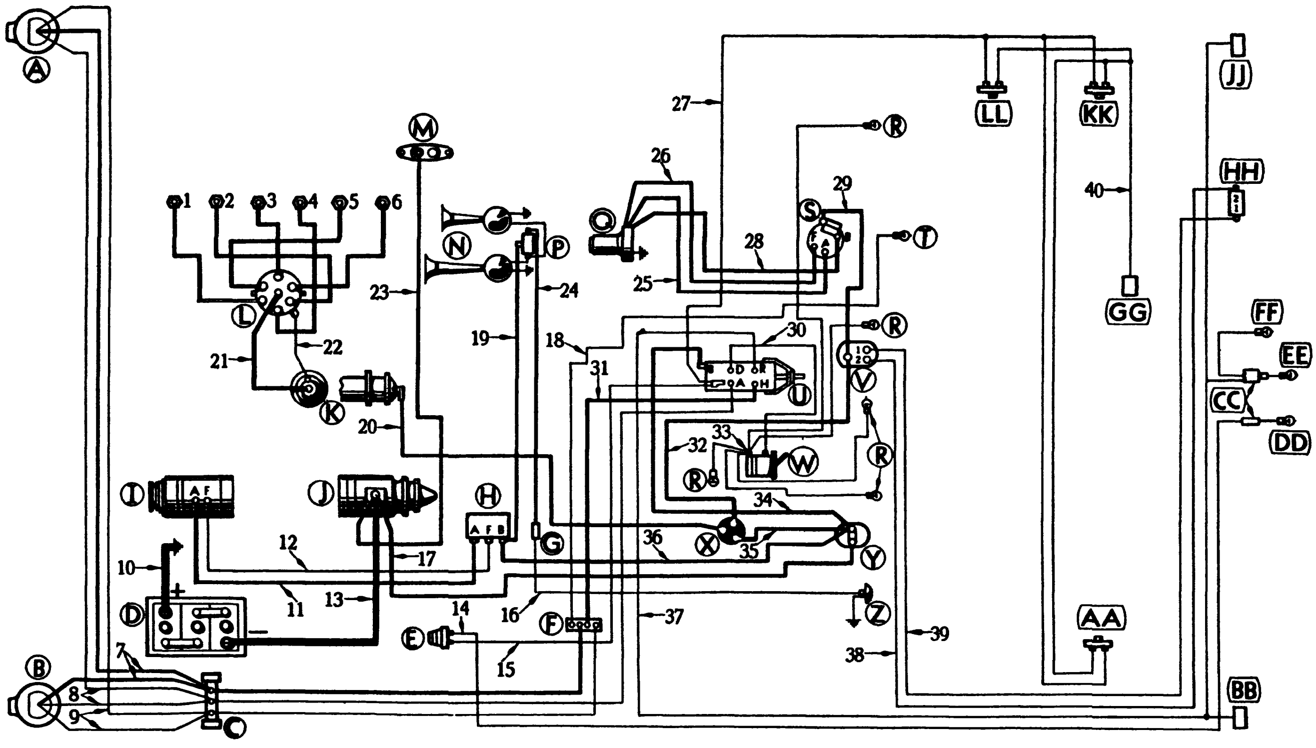
Steering **Camber** +¼° **Caster** −1° to +1° **Toe-in** 1/16″

Clutch Borg **Facings** Woven, N. Y. 6½″ x 11″ x ⅛″, Imp. 6″ x 10″ x ⅛″

Gear Ratio 4.55 to 1 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
Front 12 9/16″ x 2″ x 13/64″ **Clearance** **Toe** .007″ **Heel** .006″
Rear, front 12 9/16″ x 2″ x 13/64″ **Clearance** **Toe** .007″ **Heel** .006″
rear 9⅝″ x 2″ x 13/64″ **Clearance** .015″ to .020″
Hand 20⅛″ x 2½″ x 5/32″
Lining Moulded



DE SOTO WIRING DIAGRAM, 1941, (CUSTOM MODELS) SERIES S-8

Courtesy of Chrysler Corporation

De Soto **Model 6-Cylinder S8** **Year 1941** **Series Custom and De Luxe**

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 105

Frame Connection Positive

Lighting **Head Lights** 45-35 Watts, Sealed Beam, 6-8 Volts

Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts.

Parking Lights As in head lights

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 34 Amps. **Speed** 2200 R.P.M. Hot

Regulation Volt. and Current **Cut-in** 6.4 Volts 1000–1080 Hot

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** 3⅜″ **Stroke** 4¼″ **Taxable H.P.** 27.34

Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″

Diam. 3⅜″ **Gap** .007″ to .015″ on all

Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 12° B.T.C. **Close** 44° A.B.C. with Valve .014″

Intake Clearance .008″ Hot

Exhaust Timing—Open 50° B.B.C. **Close** 6° A.T.C. with Valve .014″

Exhaust Clearance .010″ Hot

Carburetor Carter Ball and Ball E6N3

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 4½ Gals.

Steering **Camber** +¼° **Caster** −1° to +1° **Toe-in** 1/16″

Clutch Borg **Facings** Woven, 7″ x 10″ x ⅛″

Gear Ratio 4.3 to 1, on 7 Pass. Sedan **Type** Hypoid

Axle Semi-Floating

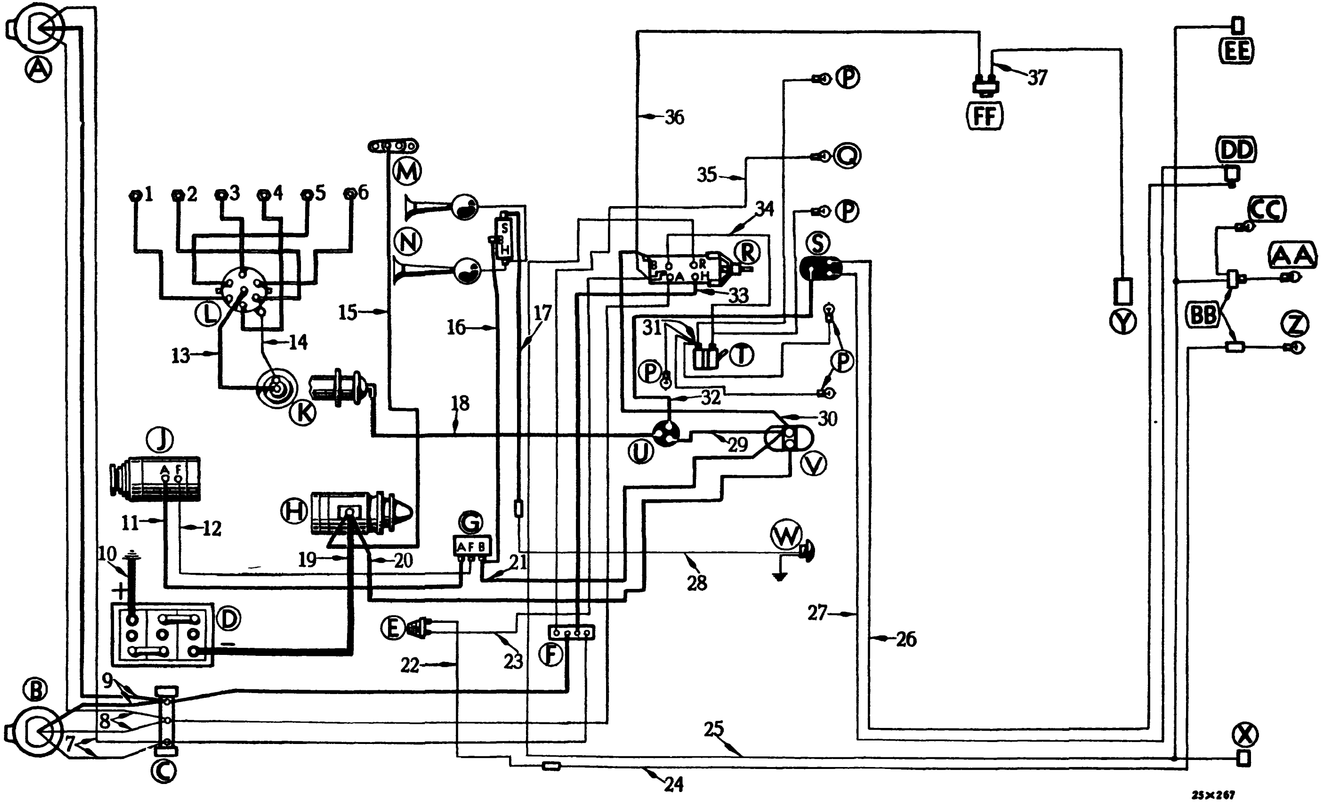
Brakes Lockheed Hydraulic

Front Shoe 11 15/32″ x 2″ x 13/64″ **Clearance** **Toe** .012″ **Heel** .006″

Rear Shoe 7 31/32″ x 2″ x 13/64″ **Clearance** **Toe** .012″ **Heel** .006″

Hand 17 1/16″ x 2″ x 5/32″ **Clearance** .015″ to .020″

Lining Moulded



DE SOTO WIRING DIAGRAM, 1941, (DE LUXE MODELS) SERIES S-8

Courtesy of Chrysler Corporation

De Soto **Model 6-Cylinder S8** **Year 1941** **Series Custom and De Luxe**

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 105

Frame Connection Positive

Lighting **Head Lights** 45-35 Watts, Sealed Beam, 6-8 Volts

Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts.

Parking Lights As in head lights

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 34 Amps. **Speed** 2200 R.P.M. Hot

Regulation Volt. and Current **Cut-in** 6.4 Volts 1000–1080 Hot

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** 3⅜″ **Stroke** 4¼″ **Taxable H.P.** 27.34

Piston Ring—Width Oil 2—5⁄32″ Comp. 2—⅛″

Diam. 3⅜″ **Gap** .007″ to .015″ on all

Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 12° B.T.C. **Close** 44° A.B.C. with Valve .014″

Intake Clearance .008″ Hot

Exhaust Timing—Open 50° B.B.C. **Close** 6° A.T.C. with Valve .014″

Exhaust Clearance .010″ Hot

Carburetor Carter Ball and Ball E6N3

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 4½ Gals.

Steering **Camber** +¼° **Caster** −1° to +1° **Toe-in** 1⁄16″

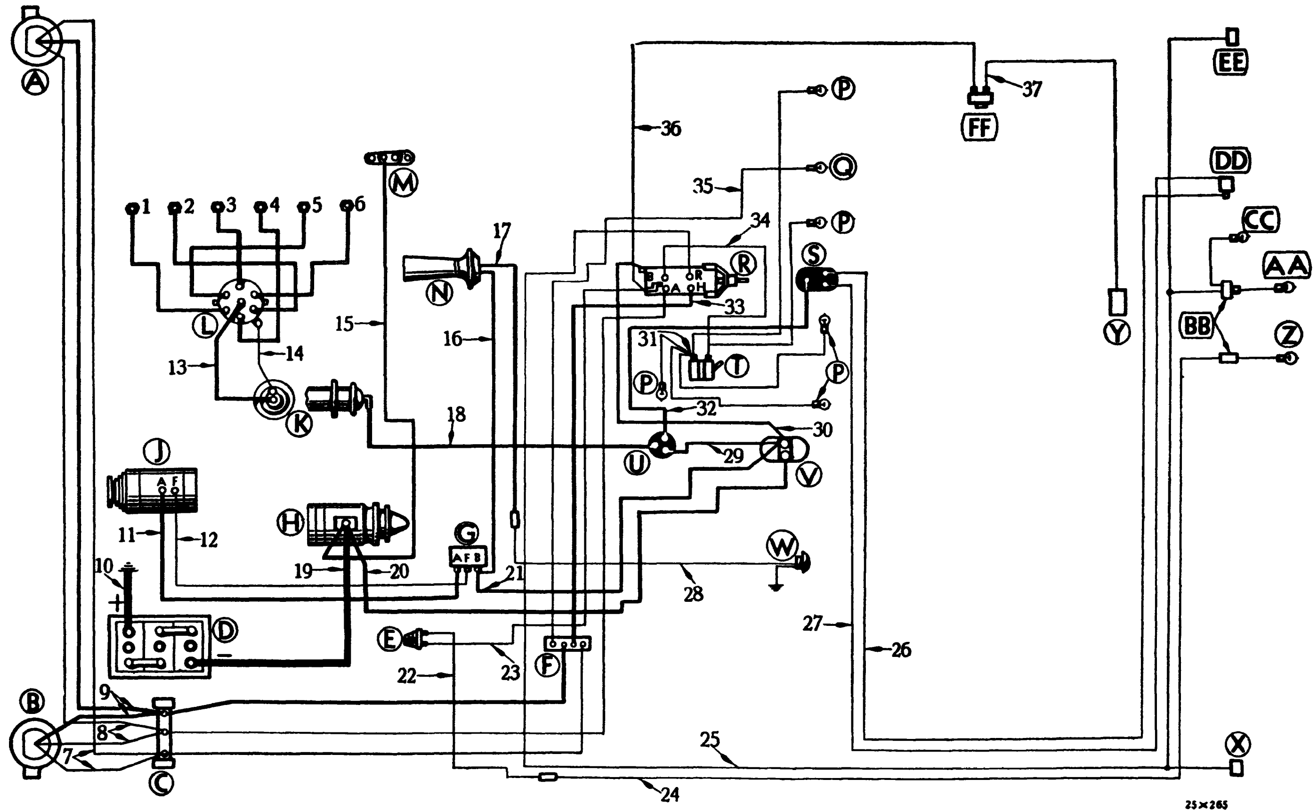
Clutch Borg **Facings** Woven, 7″ x 10″ x ⅛″

Gear Ratio 4.3 to 1, on 7 Pass. Sedan **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front Shoe** 11 15⁄32″ x 2″ x 13⁄64″ **Clearance** **Toe** .012″ **Heel** .006″
- **Rear Shoe** 7 31⁄32″ x 2″ x 13⁄64″ **Clearance** **Toe** .012″ **Heel** .006″
- **Hand** 17 1⁄16″ x 2″ x 5⁄32″ **Clearance** .015″ to .020″

Lining Moulded



DODGE WIRING DIAGRAM, 1941, (DE LUXE MODELS) SERIES D19

Courtesy of Chrysler Corporation

Dodge **Model** 6-Cylinder **Year** 1941 **Series** D19

Battery Auto-Lite **Type** 15-Plate **Volts** 6 **Amps.** 95

Frame Connection Positive

Lighting **Head Lights** 45-35 Watts, 6-8 Volts

Tail and Stop 3-21 C.P., 6-8 Volts. **Dash** $1\frac{1}{2}$ C.P., 6-8 Volts

Parking Lights $1\frac{1}{2}$ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed** 2100 to 2400 R.P.M.

Regulation Volt. and Current **Cut-in** 6.4 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** $3\frac{1}{4}$″ **Stroke** $4\frac{3}{8}$″ **Taxable H.P.** 25.35

Piston Ring—Width Oil 2—$\frac{5}{32}$″ Comp. 2—Upper $\frac{3}{32}$″, Lower $\frac{1}{8}$″

Diam. $3\frac{1}{4}$″ **Gap** .007″ to .015″

Oiling—Type Pump, Gear **Capacity** 5 Qts

Valves **Intake Timing—Open** 9° B.T.C. **Close** 47° A B.C.

Intake Clearance .008″ Hot

Exhaust Timing—Open 47° B.B.C. **Close** 9° A.T.C.

Exhaust Clearance .010″ Hot

Carburetor Stromberg BXV3

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 15 Qts.

Steering **Camber** 0° to +$\frac{3}{4}$° **Caster** −1° to +1° **Toe-in** 0″ to $\frac{1}{8}$″

Clutch Borg **Facings** Woven, 7″ x 10″ x $\frac{1}{8}$″

Gear Ratio 4.3 to 1 **Type** Hypoid

Axle Semi-Floating

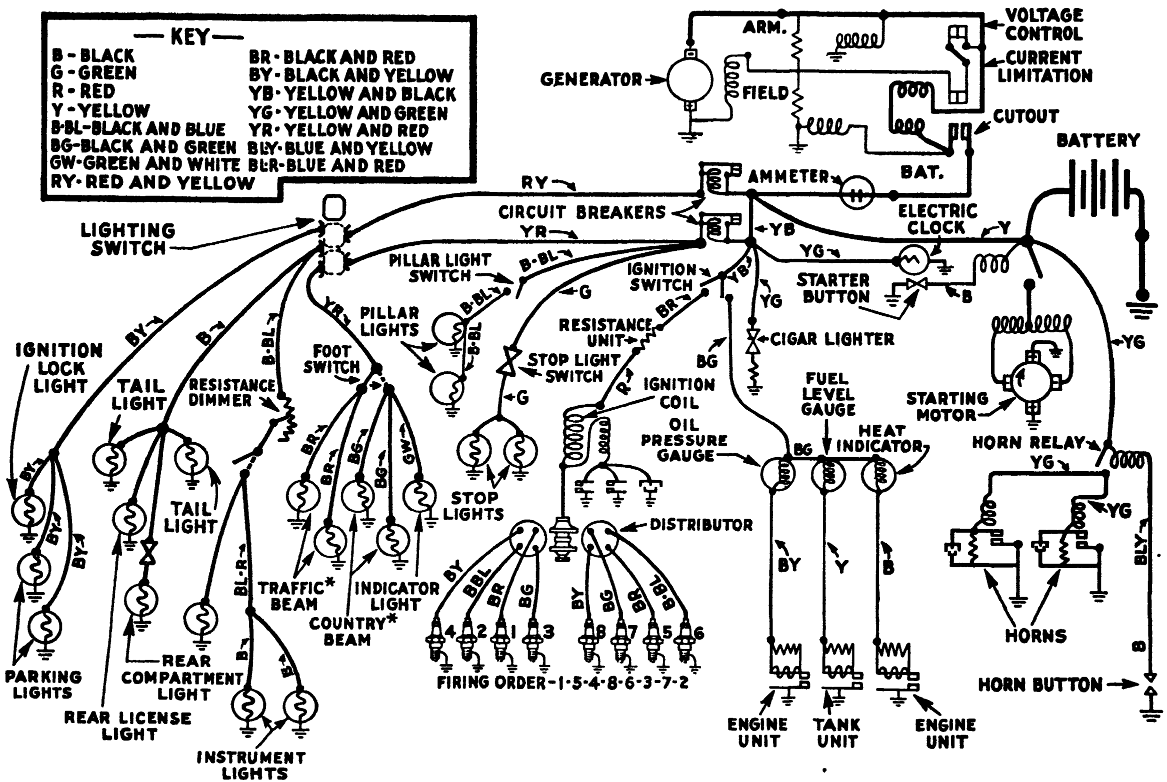
Brakes Lockheed Hydraulic

Front Shoe $11\frac{15}{32}$″ x 2″ x $\frac{13}{64}$″ **Clearance** **Toe** .012″ **Heel** .006″

Rear Shoe $7\frac{31}{32}$″ x 2″ x $\frac{13}{64}$″ **Clearance** **Toe** .012″ **Heel** .006″

Hand Transmission, $17\frac{1}{16}$″ x 2″ x $\frac{3}{32}$″ **Clearance** .015″–.020″

Lining Moulded



FORD WIRING DIAGRAM, 1941, MODELS DE LUXE AND SUPER DE LUXE

Courtesy of Ford Motor Company

Ford **Model DeLuxe and Super DeLuxe** **Year 1941**

Battery Own **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1 C.P., 6-8 Volts
Parking Lights In head lamp

Starter and Generator Own

Generator **Max. Chg. Rate** 32 Amps. **Speed** 1100
Regulation Volt. and Current **Cut-in** 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-4-8-6-3-7-2
Timing 4° B.T.C.

Engine **Bore** 3.062″ **Stroke** 3.75″ **Taxable H.P.** 30
Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″
Diam. 3.062″ **Gap** .012″ on all
Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 44° A.B.C.
Intake Clearance .011″
Exhaust Timing—Open 48° B.B.C. **Close** 6° A.T.C.
Exhaust Clearance .011″

Carburetor Holley AA1-91

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 26¼ Qts.

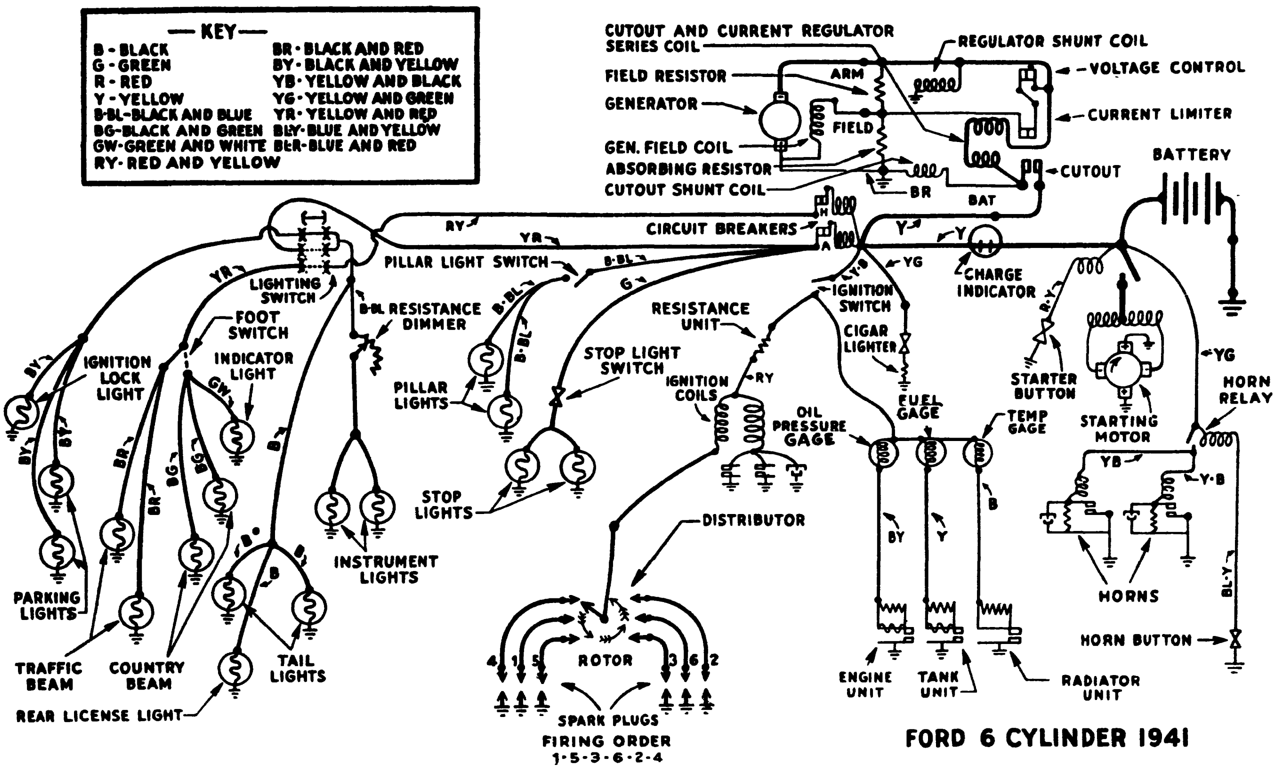
Steering **Camber** ¼° **Caster** 4½° **Toe-in** 1/16″

Clutch Long **Facings** Moulded, 5¾″ x 9″ x .137″

Gear Ratio 34-9 **Type** Spiral

Axle ¾-Floating

Brakes Lockheed Hydraulic
Front 23¼″ x 1¾″ x .20″ **Clearance** **Toe** **Heel**
Rear 23¼″ x 1¾″ x .20″ **Clearance** **Toe** **Heel**
Hand Rear Service
Lining Moulded



SIMPLIFIED WIRING DIAGRAM OF 6-CYLINDER FORD CAR, 1941

*Tail light, stop light and headlamp bulbs are actually two-filament bulbs; they have been shown as separate bulbs in this diagram to simplify the circuits

Courtesy of Ford Motor Co.

Ford Model 6 Cylinder Year 1941 Series 1G

Battery Own **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6–8 Volts
Tail and Stop 21-3 C.P., 6–8 Volts. **Dash** 1 C.P., 6–8 Volts
Parking Lights In head lamp

Starter and Generator Own

Generator **Max. Chg. Rate** 32 Amps. **Speed** 1100 R.P.M.
Regulation Volt. and Current **Cut-in** 7 Volts

Ignition **Contact Breaker Gap** .014″
Spark Plug—Size 14 M.M. **Gap** .030″–.034″
Firing Order 1-5-3-6-2-4
Timing 2°

Engine **Bore** 3.30″ **Stroke** 4.40″ **Taxable H.P.** 26.1
Piston Ring—Width Comp. 2–.0915″ to .0920″, Oil 1–.186″ to .1865″
Diam. 3.30″ **Gap** .012″ to .017″ on all
Oiling—Type Pump Gear **Capacity** 5 qts.

Valves **Intake Timing—Open** 3° B.T.C. **Close** 41.0° A.B.C.
Intake Clearance .0125″ to .0135″
Exhaust Timing—Open 48° B.B.C. **Close** 6° A.T.C.
Exhaust Clearance .0125″ to .0135″

Carburetor Down Draft

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 22 Qts.

Steering Camber ¼″ **Caster** 4½° **Toe-In** ⅛″

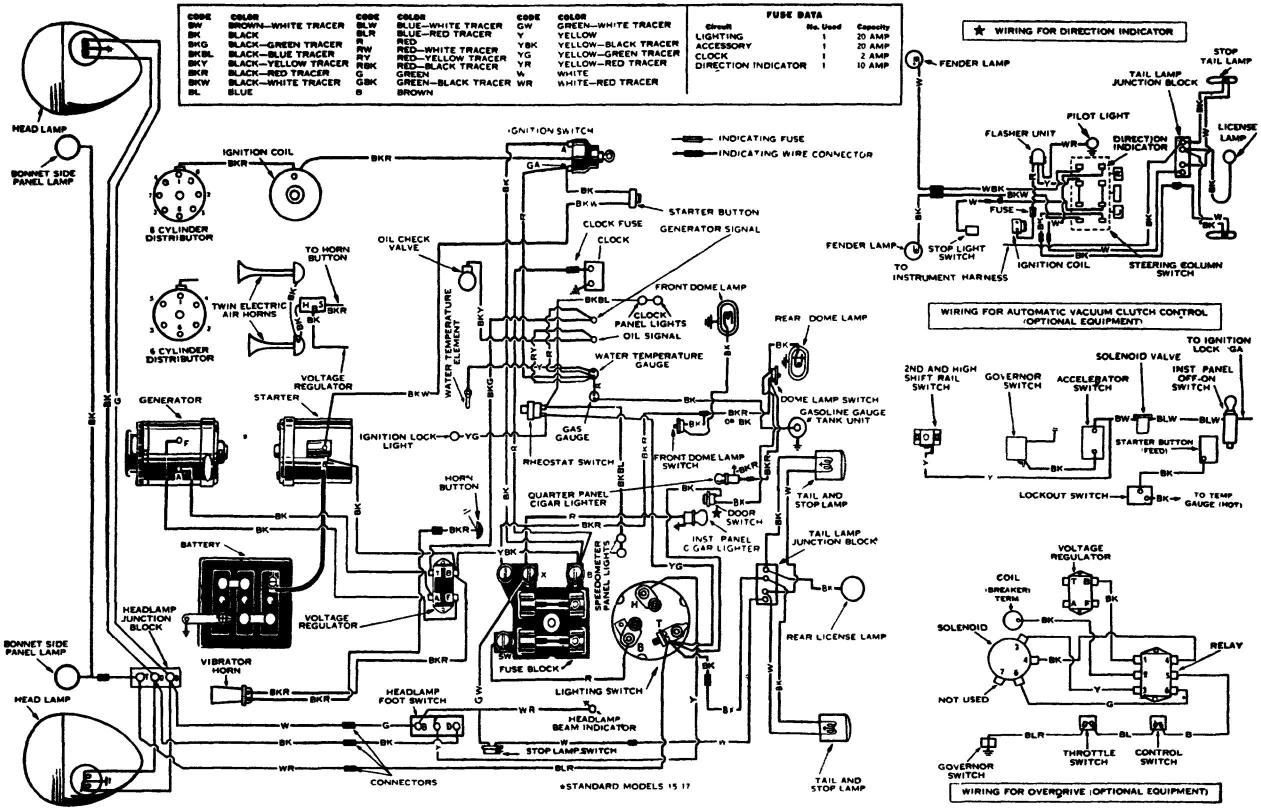
Clutch Semi-Centrifugal **Facings** 10.0 x .0125

Gear Ratio 3.63–1 **Type** Spiral

Axle ¾-Floating

Brakes Lockheed Hydraulic
- **Front** 23¼″ x 1¾″ x 20″
- **Rear** 23¼″ x 1¾″ x .20″
- **Hand** Rear Service

Lining Moulded



HUDSON WIRING DIAGRAM, 1941, MODELS 6- AND 8-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson **Model 8-Cylinder** **Year 1941** **Series 14, 15, 17**

Battery National **Type** 19-Plate **Volts** 6 **Amps.** 108
Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1 and 1½ C.P., 6-8 Volts
Parking Lights In head lights

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 38 Amps. Hot **Speed** 3600 R.P.M.
Regulation Voltage **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .017″
Spark Plug—Size 14 M.M. **Gap** .032″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 4½″ **Taxable H.P.** 28.8
Piston Ring—Width Oil 2—Upper 3/16″, Lower 5/32″ Comp. 2—3/32″
Diam. 3″ **Gap** .009″ on all
Oiling—Type Splash Plunger **Capacity** 7 Qts.

Valves **Intake Timing—Open** 10° 40′ B.T.C. **Close** 60° A.B.C.
Intake Clearance .010″ Hot, after Car 6848
Exhaust Timing—Open 50° B.B.C. **Close** 18° 44′ A.T.C.
Exhaust Clearance .012″ Hot, after Car 6848

Carburetor Carter 502S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts.

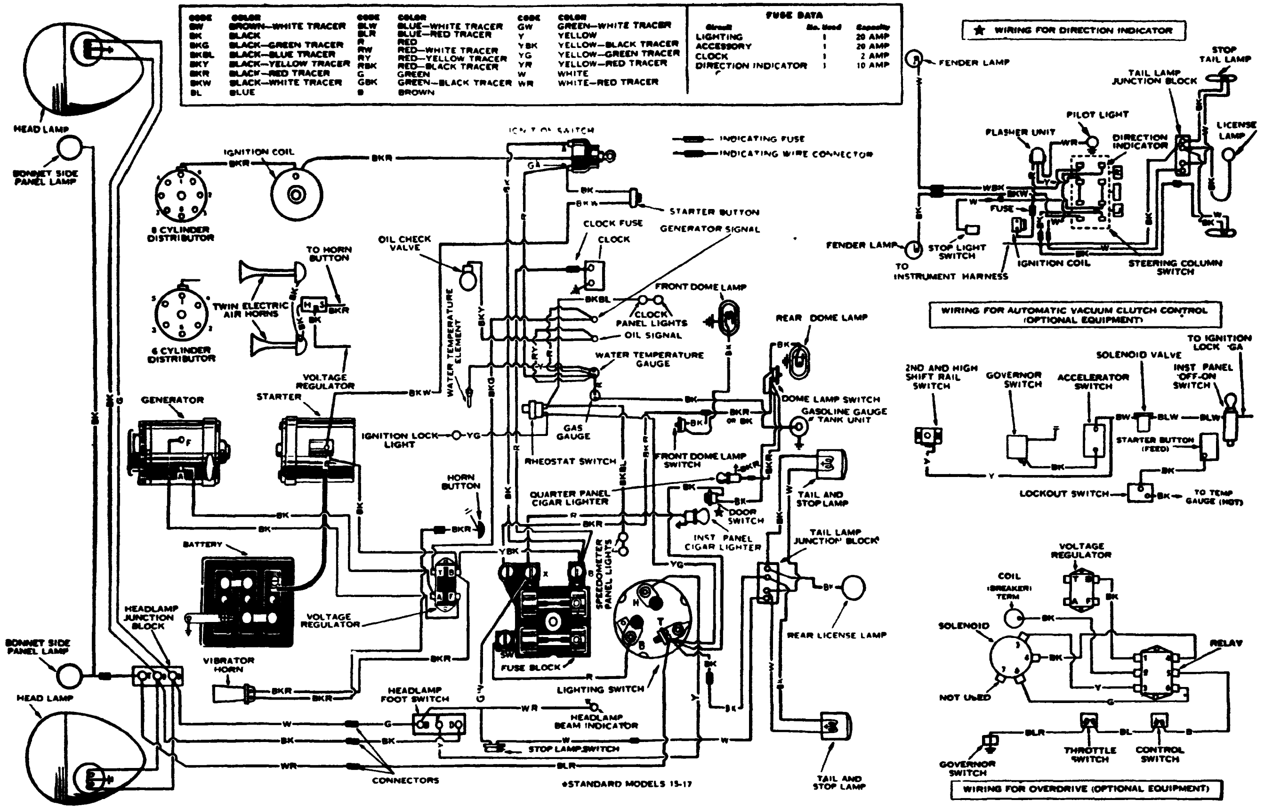
Steering **Camber** ½° **Caster** 0° **Toe-in** 1/32″

Clutch Own **Facings** Cork, 6⅜″ x 9/32″ x 13/64″

Gear Ratio 37-9 **Type** Spiral

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 21 19/32″ x 1¾″ x 7/32″ **Clearance** .010″
Rear 21 19/32″ x 1¾″ x 7/32″ **Clearance** .010″
Hand Rear Service
Lining Moulded and Woven



HUDSON WIRING DIAGRAM, 1941, MODELS 6- AND 8-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson **Model 6-Cylinder** **Year 1941** **Series All Models**

Battery National **Type** 17-Plate **Volts** 6-8 **Amps.** 96

Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6-8 Volts

Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1 and 1½ C.P., 6-8 V.

Parking Lights In head lights

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 29 Amps. Hot **Speed** 3100 R.P.M.

Regulation Voltage **Cut-in** 6.4 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .032″

Firing Order 1-5-3-6-2-4

Timing ½° B.T.C.

Engine **Bore** 3″ ***Stroke** 4⅛″ **Taxable H.P.** 21.6

Piston Ring—Width Oil 2—3/16″ Upper, Lower 5/32″ Comp. 2—3/32″

Diam. 3″ **Gap** .009″

Oiling—Type Splash, Plunger **Capacity** 4½ Qts.

Valves **Intake Timing—Open** 28° 30′ B.T.C. **Close** 68° 30′ A.B.C. after Car 6848

Intake Clearance to Car 6848, .006″, after Car 6848, .010″ Hot

Exhaust Timing—Open 52° 40′ B.B.C. **Close** 32° 40′ A.T.C. after Car 6848

Exhaust Clearance to Car 6848, .008″, after Car 6848, .012″ Hot

Carburetor Carter 454S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

Steering **Camber** ½° **Caster** 0° **Toe-in** 1/32″

Clutch Own **Facings** Cork, 5¼″ x 8 11/16″ x 13/64″

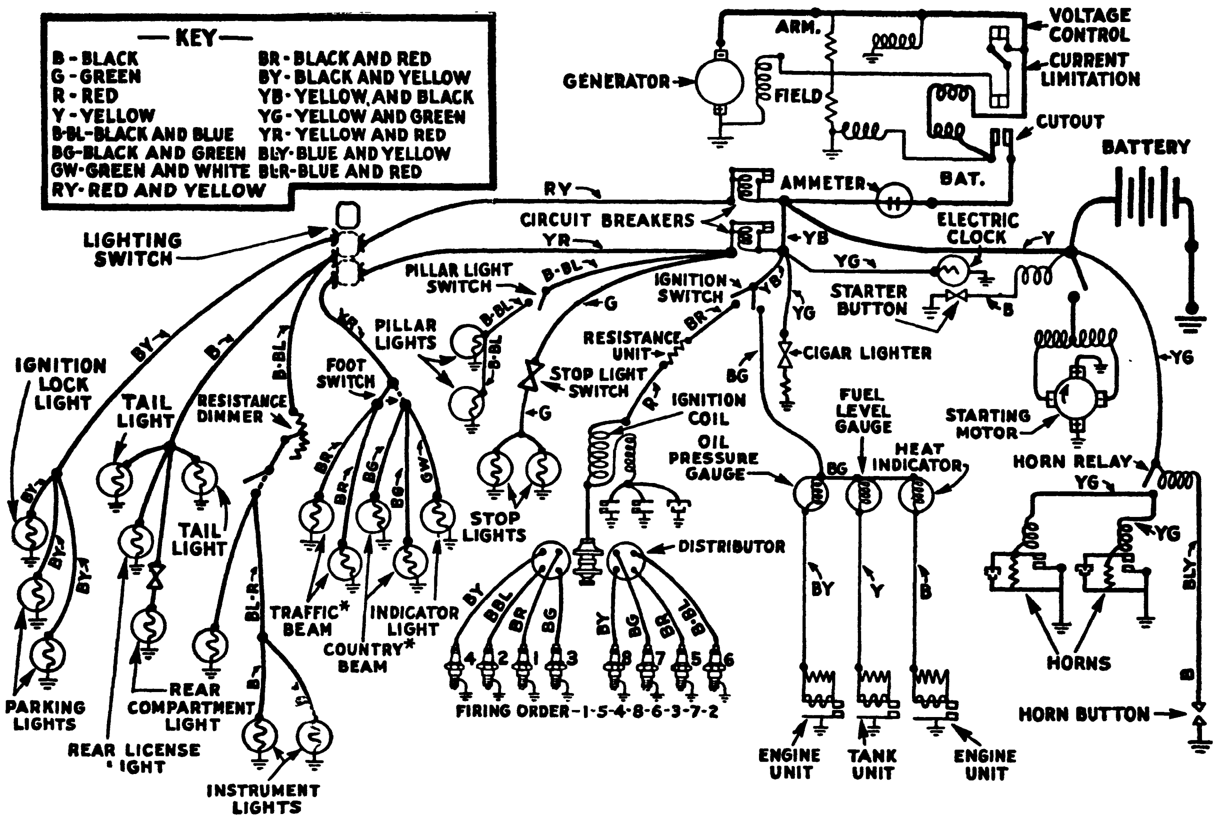
Gear Ratio 41-9 **Type** Spiral

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 19 27/32″ x 1¾″ x 3/16″ **Clearance** .010″
- **Rear** 19 27/32″ x 1¾″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded and Woven

*Note: On Models 18P, 18C, 11, 12, the Stroke is 5″.



MERCURY WIRING DIAGRAM, 1941, MODEL 8-CYLINDER

Courtesy of Ford Motor Company

Mercury **Model 8-Cylinder** **Year 1941**

Battery Own **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1 and 1½ C.P., 6-8 Volts
Parking Lights In head lights

Starter and Generator Own

Generator Own **Max. Chg. Rate** 32 Amps. **Speed** 1100 R.P.M.
Regulation Volt. and Current **Cut-in**
Relay Air Gap **Contact Gap**

Ignition Own **Contact Breaker Gap** .014″
Spark Plug—Size H 10 **Gap** .025″
Firing Order 1-5-4-8-6-3-7-2
Timing 4 B.T.C.

Engine **Bore** 3.187″ **Stroke** 3.75″ **Taxable H.P.** 32.5
Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″
Diam. 3.187″ **Gap** .012″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** D.C. **Close** 44 A.B.C.
Intake Clearance .011″
Exhaust Timing—Open 48° B.B.C. **Close** 6 A.T.C.
Exhaust Clearance .011″

Carburetor Holley AA1-91

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 23¾ Qts.

Steering **Camber** ¼° **Caster** 4½° **Toe-in** 1/16″

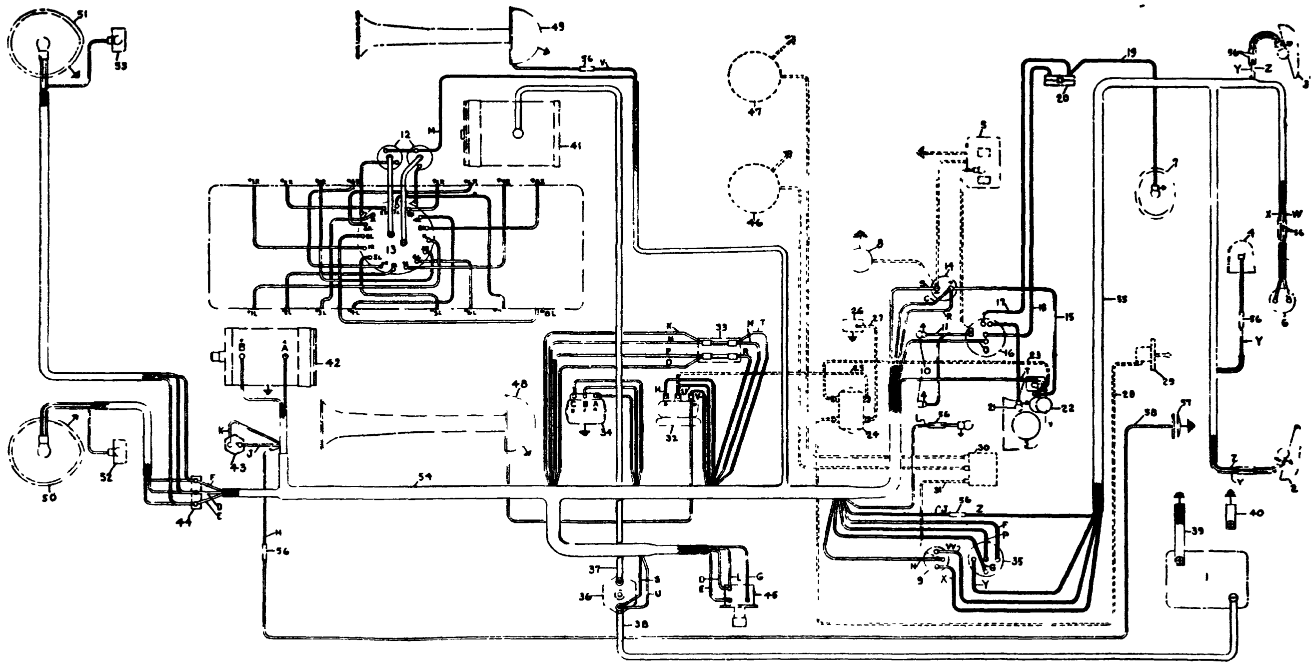
Clutch Long **Facings** Woven, 5¾″ x 10″ x .137″

Gear Ratio 3.5 to 1 **Type** Spiral Bevel

Axle ¾-Floating

Brakes Lockheed Hydraulic
- **Front** 23¼″ x 1¾″ x .20″ **Clearance**
- **Rear** 23¼″ x 1¾″ x .20″ **Clearance**
- **Hand** Rear Service

Lining Moulded



NASH WIRING DIAGRAM, 1941, SERIES AMBASSADOR 6 AND AMBASSADOR 8

Courtesy of Nash-Kelvinator Corporation

Nash Model 6-Cylinder 4160 Year 1941 Series Ambassador 6

Battery Auto-Lite **Type** 15-Plate **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6-8 Volts
Tail and Stop Mazda 1158. **Dash** Mazda 55
Parking Lights Mazda 63

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed** *
Regulation Volt. and Current **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 6° B.T.C.

Engine **Bore** 3⅜″ **Stroke** 4⅜″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2—5/32″ Comp. 2—⅛″
Diam. 3⅜″ **Gap** .010″ on all
Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 11.6° A.T.C. **Close** 34.6° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 49.3° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Carter 435S

Cooling System Centrifugal **Type** Pump, Shaft **Capacity** 17 Qts.

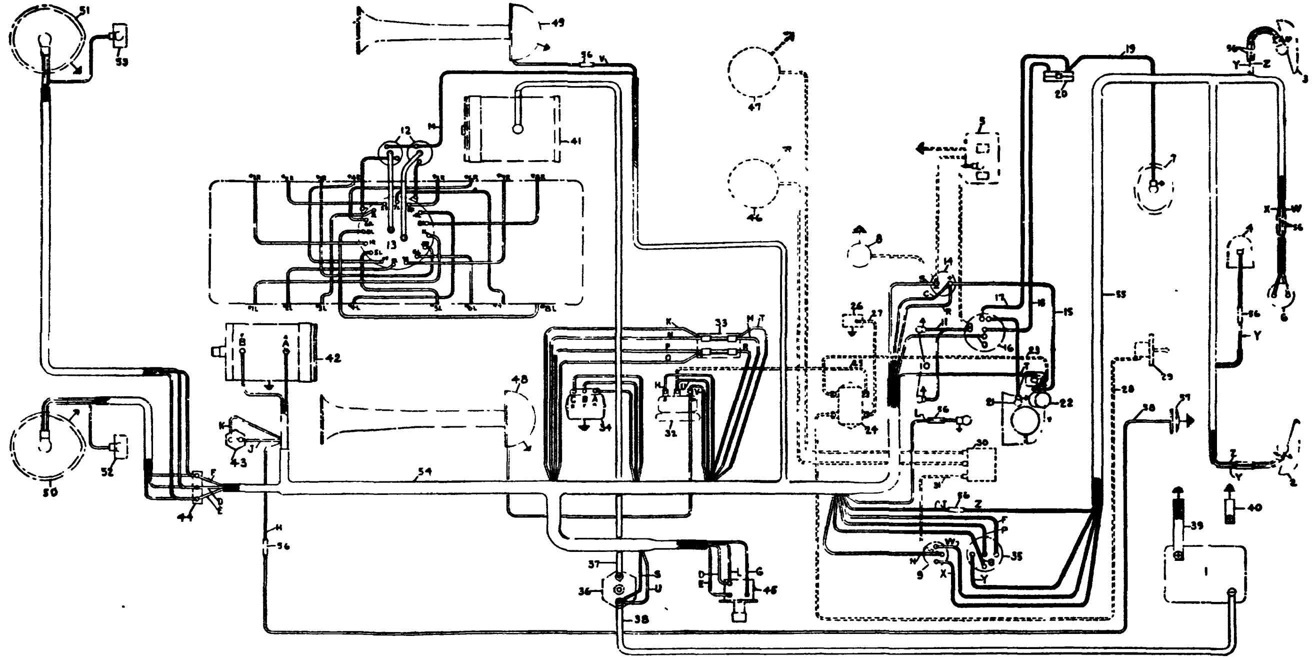
Steering **Camber** ¼° **Caster** 0° **Toe-in** 1/32″

Clutch Borg **Facings** Woven, 7″ x 10″ x .133″

Gear Ratio 41-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 22″ x 2″ x 3/16″ **Clearance** .010″
Rear 22″ x 2″ x 3/16″ **Clearance** .010″
Hand Rear Service
Lining Moulded



NASH WIRING DIAGRAM, 1941, SERIES AMBASSADOR 6 AND AMBASSADOR 8

Courtesy of Nash-Kelvinator Corporation

Nash Model 8-Cylinder 4180 Year 1941 Series Ambassador 8

Battery Auto-Lite **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6-8 Volts
Tail and Stop Mazda 1158. **Dash** Mazda 55
Parking Lights Mazda 63

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed**
Regulation Volt. and Current **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 9° B.T.C.

Engine **Bore** 3⅛″ **Stroke** 4¼″ **Taxable H.P.** 31.25
Piston Ring—Width Oil 2—Upper ⅛″, Lower 3/16″ Comp. 2—⅛″
Diam. 3⅛″ **Gap** .010″ on all
Oiling—Type Pump, Gear **Capacity** 7 Qts.

Valves **Intake Timing—Open** 16° A.T.C. **Close** 38° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Carter 511S

Cooling System Centrifugal **Type** Pump, Shaft **Capacity** 16 Qts.

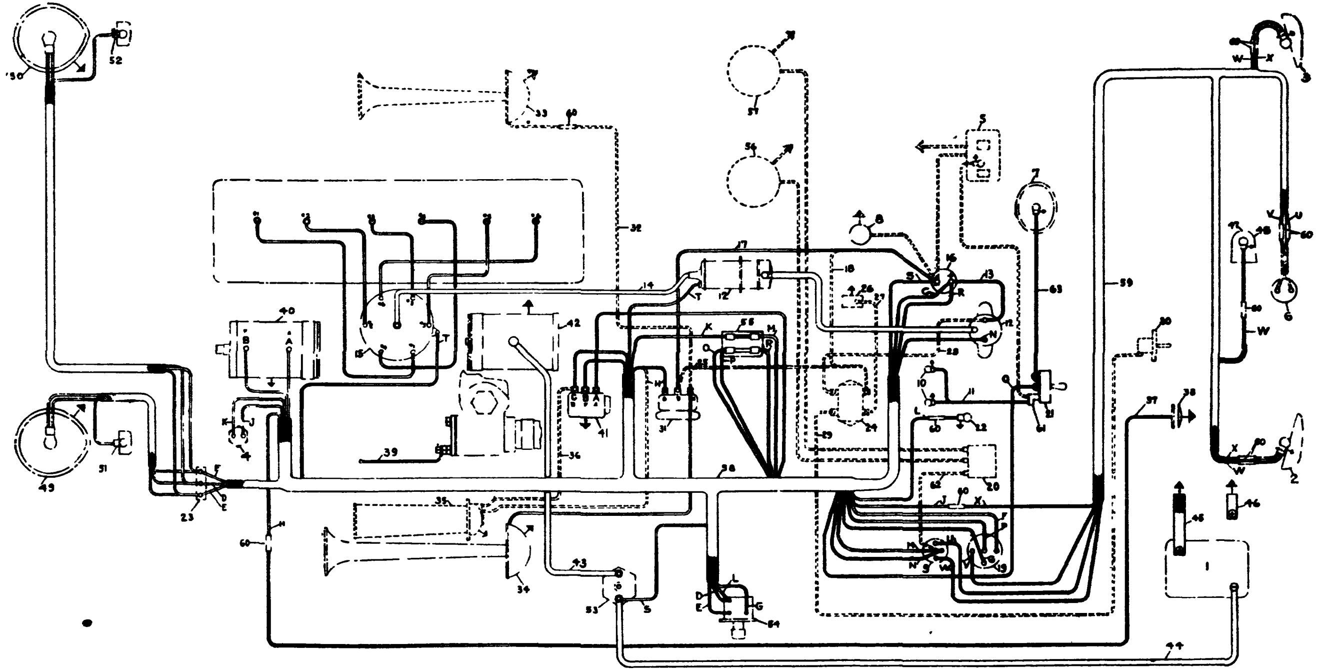
Steering **Camber** ¼° to ¾° **Caster** 0° to −½° **Toe-in** 1/32″ to 3/32″

Clutch Borg **Facings** Woven, 7″ x 10″ x .133″

Gear Ratio 41-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 22″ x 2″ x 3/16″ **Clearance** .010″
Rear 22″ x 2″ x 3/16″ **Clearance** .010″
Hand Rear Service
Lining Moulded



NASH WIRING DIAGRAM, 1941, SERIES AMBASSADOR 600

Courtesy of Nash-Kelvinator Corporation

Nash Model 6-Cylinder 4140 Year 1941 Series Ambassador 600

Battery Auto-Lite **Type** 13-Plate **Volts** 6 **Amps.** 90

Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6-8 Volts

Tail and Stop Mazda 1158. **Dash** Mazda 55

Parking Lights Mazda 63

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 35 Amps. **Speed** 2400 R.P.M.

Regulation Volt. and Current **Cut-in** 6.2 Volts

Relay Air Gap **Contact Gap**

Ignition Delco **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** 3⅛″ **Stroke** 3¾″ **Taxable H.P.** 23.44

Piston Ring—Width Oil 1—3/16″ Comp. 2—3/32″

Diam. 3⅛″ **Gap** .010″ on all

Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 19° B.T.C. **Close** 63° A.B.C.

Intake Clearance .015″ Hot

Exhaust Timing—Open 59° B.B.C. **Close** 23° A.T.C.

Exhaust Clearance .015″

Carburetor Carter 513S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 4 Qts.

Steering **Camber** 0° to ½° **Caster** 0° to ¼° **Toe-in** 0″ to 1/16″

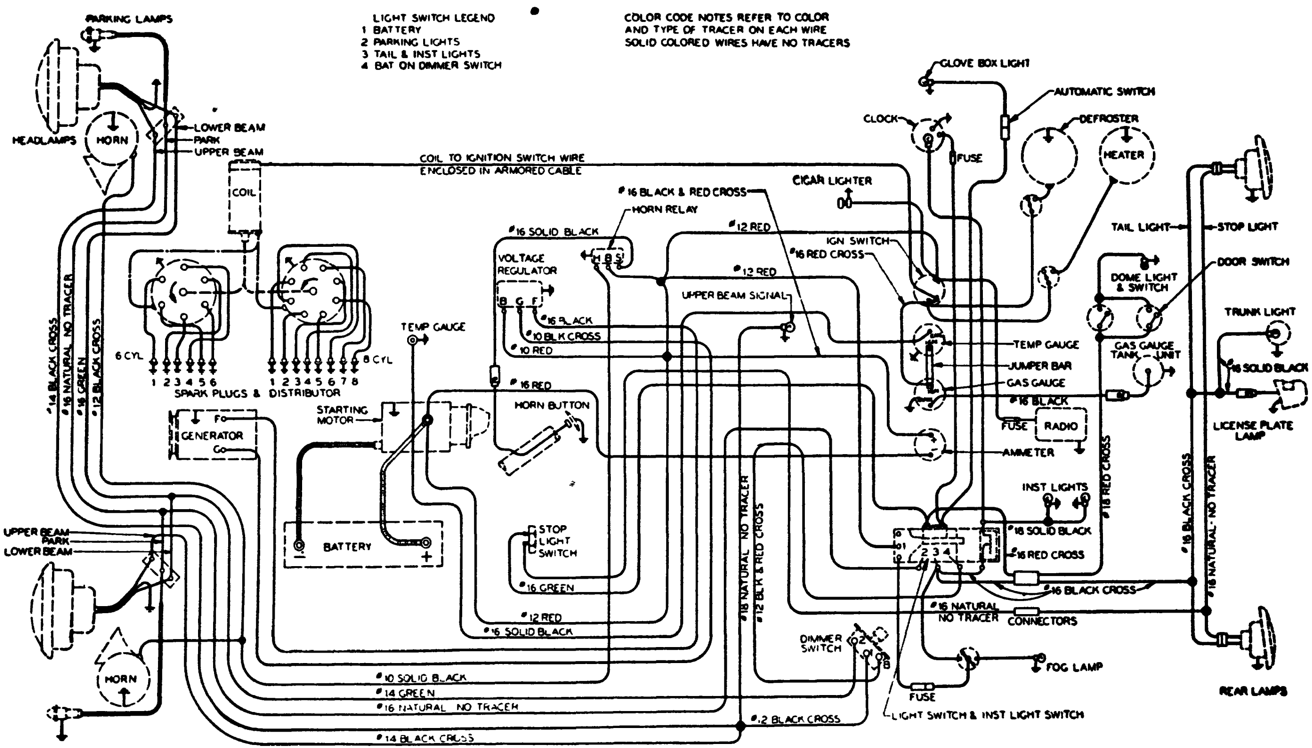
Clutch Borg **Facings** Woven, 5¼″ x 7⅛″ x ⅛″

Gear Ratio 37-9 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 20½″ x 1¾″ x 3/16″ **Clearance** .010″
- **Rear** 20½″ x 1¾″ x 3/16″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded



OLDSMOBILE WIRING DIAGRAM, 1941, MODELS 6- AND 8-CYLINDER

Courtesy of Olds Motor Works

Oldsmobile Model 6-Cylinder Year 1941

Battery Delco **Type** 15E2W **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Head Lights** Sealed Beam, 35-45 Watts, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts. **Dash** 1.5 C.P., 6-8 Volts
Parking Lights 3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 32 Amps. Hot **Speed** 2400 R.P.M.
Regulation Volt. and Current **Cut-in** 6.2 Volts
Relay Air Gap .020″ **Contact Gap** .020″

Ignition Delco-Remy **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .040″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3½″ **Stroke** 4⅛″ **Taxable H.P.** 29.4
Piston Ring—Width Oil 2—.186″ Comp. 2—.093″
Diam. 3½″ **Gap** Oil .007″ to .015″; Comp. .008″ to .018″
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 45° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .011″ Hot

Carburetor Carter 504-S or 481-S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts.

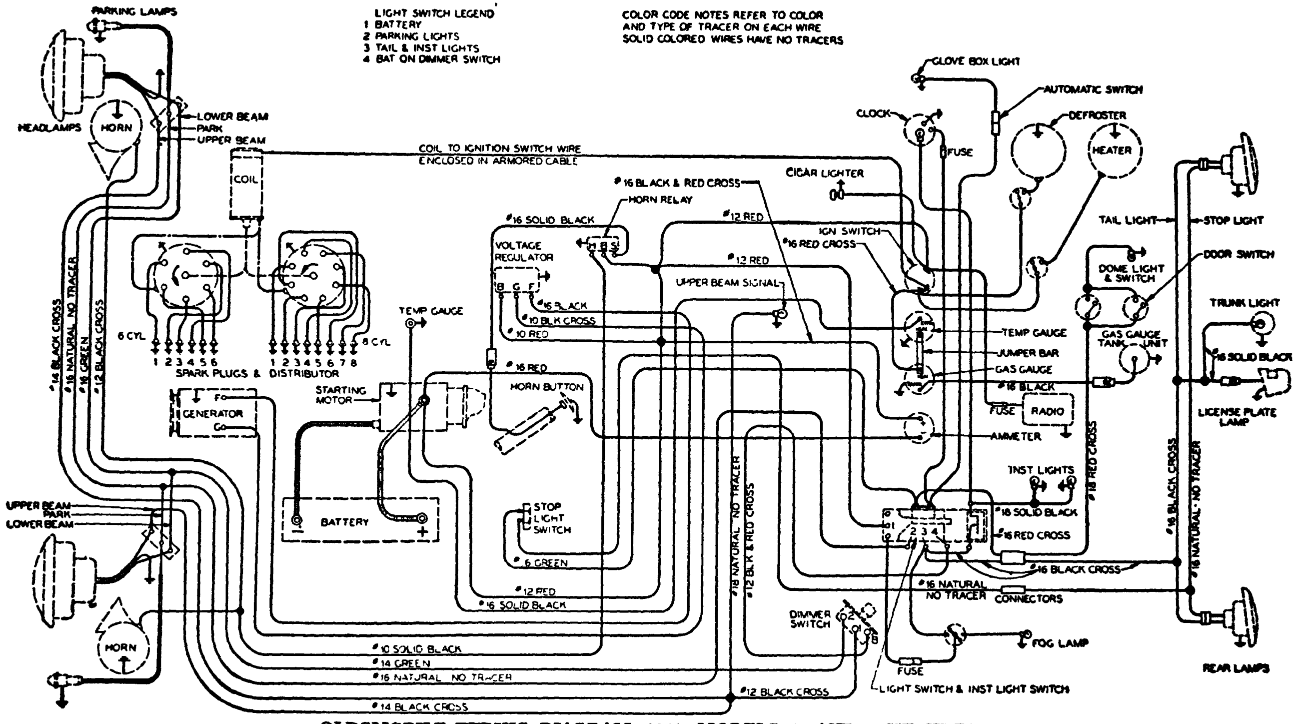
Steering **Camber** ¼° **Caster** 0° **Toe-in** 1/16″

Clutch Borg **Facings** Moulded and Woven, 6″ x 9¼″ x .125″

Gear Ratio 41-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
Front 2 15/16″ x 1¾″ x 3/16″ **Clearance** .015″
Rear 2 15/16″ x 1¾″ x 3/16″ **Clearance** .015″
Hand Rear Service
Lining Moulded



OLDSMOBILE WIRING DIAGRAM, 1941, MODELS 6- AND 8-CYLINDER

Courtesy of Olds Motor Works

Oldsmobile **Model 8-Cylinder** **Year 1941**

Battery Delco **Type** 17 E2-W **Volts** 6 **Amps.** 120

Frame Connection Negative

Lighting **Head Lights** 35-45 Watts, 6-8 Volts

Tail and Stop 3-21 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volt

Parking Lights 3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 32 Amps. Hot **Speed** 2400 R.P.M.

Regulation Volt. and Current **Cut-in** 6.2 Volts

Relay Air Gap .020″ **Contact Gap** .020″

Ignition Delco-Remy **Contact Breaker Gap** .015″

Spark Plug—Size 14 M.M. **Gap** .030″

Firing Order 1-6-2-5-8-3-7-4

Timing 2° B.T.C.

Engine **Bore** 3¼″ **Stroke** 3⅞″ **Taxable H.P.** 33.8

Piston Ring—Width Oil 2—3/16″ Comp. 2—3/32″

Diam. 3¼″ **Gap** .009″ on all

Oiling—Type **Capacity** 6 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 35° A.B.C.

Intake Clearance .008″ Hot

Exhaust Timing—Open 45° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance .011″ Hot

Carburetor Carter 503S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 22 Qts.

Steering **Camber** ¼° **Caster** 0° **Toe-in** 1/16″

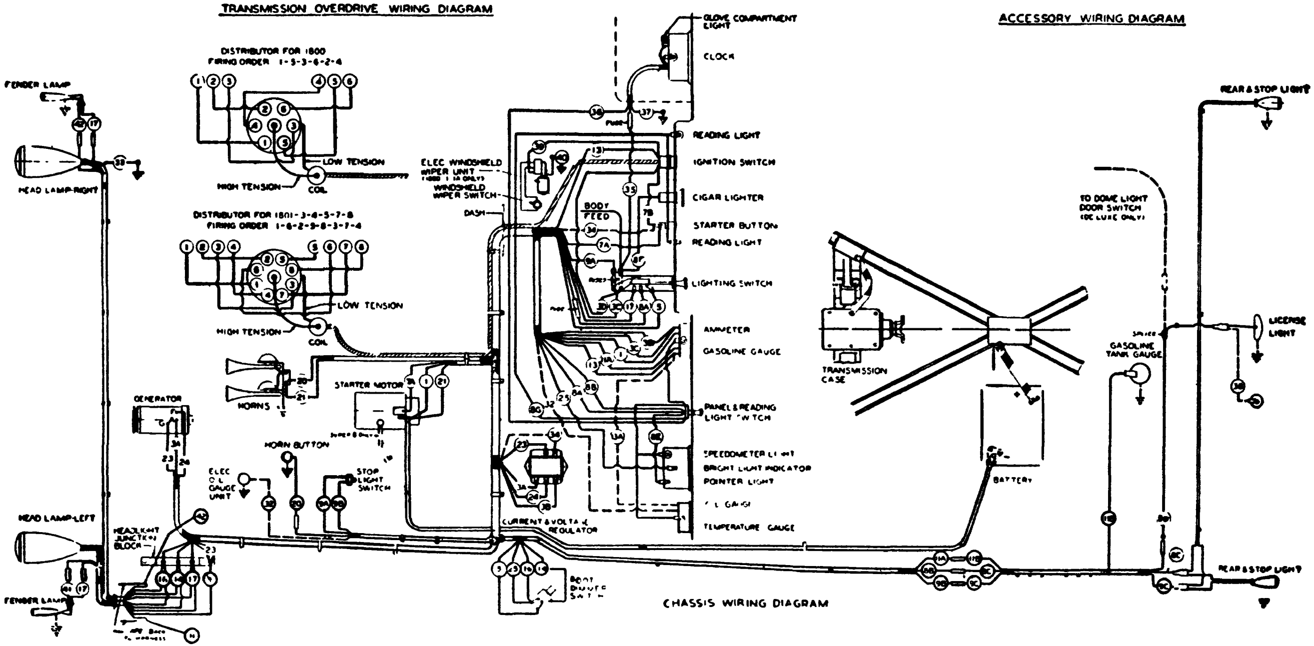
Clutch Borg **Facings** Moulded and Woven, 7″ x 10″ x ⅛″

Gear Ratio 43-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 21 5/16″ x 2″ x 3/16″ **Clearance** .015″
- **Rear** 21 5/16″ x 2″ x 3/16″ **Clearance** .015″
- **Hand** Rear Service

Lining Moulded



PACKARD WIRING DIAGRAM, 1941, MODEL 8-CYLINDER SERIES 1801

Courtesy of Packard Motor Car Company

Packard **Model 8-Cylinder** **Year 1941** **Series 1801**

Battery Auto-Lite **Type** 17-Plate **Volts** 6 **Amps.** 114

Frame Connection Positive

Lighting **Head Lights** 30-40 Watts, 6-8 Volts

Tail and Stop 3-21 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts

Parking Lights 21-3 C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 34 Amps. **Speed**

Regulation Volt. and Current **Cut-in** 6.4 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .015″

Spark Plug—Size 10 M.M. **Gap** .028″+ or −.002″

Firing Order 1-6-2-5-8-3-7-4

Timing 6½° to 8° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4¼″ **Taxable H.P.** 33.8

Piston Ring—Width Oil 1—3/16″ Comp. 1—3/16″, 1—⅛″

Diam. 3¼″ **Gap** .007″ on all

Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 39° A.B.C.

Intake Clearance .007″ Warm

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .010″ Warm

Carburetor Stromberg EE-16

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts.

Steering **Camber** ½° −0 +¾° **Caster** 1½°+ −½° **Toe-in** 0

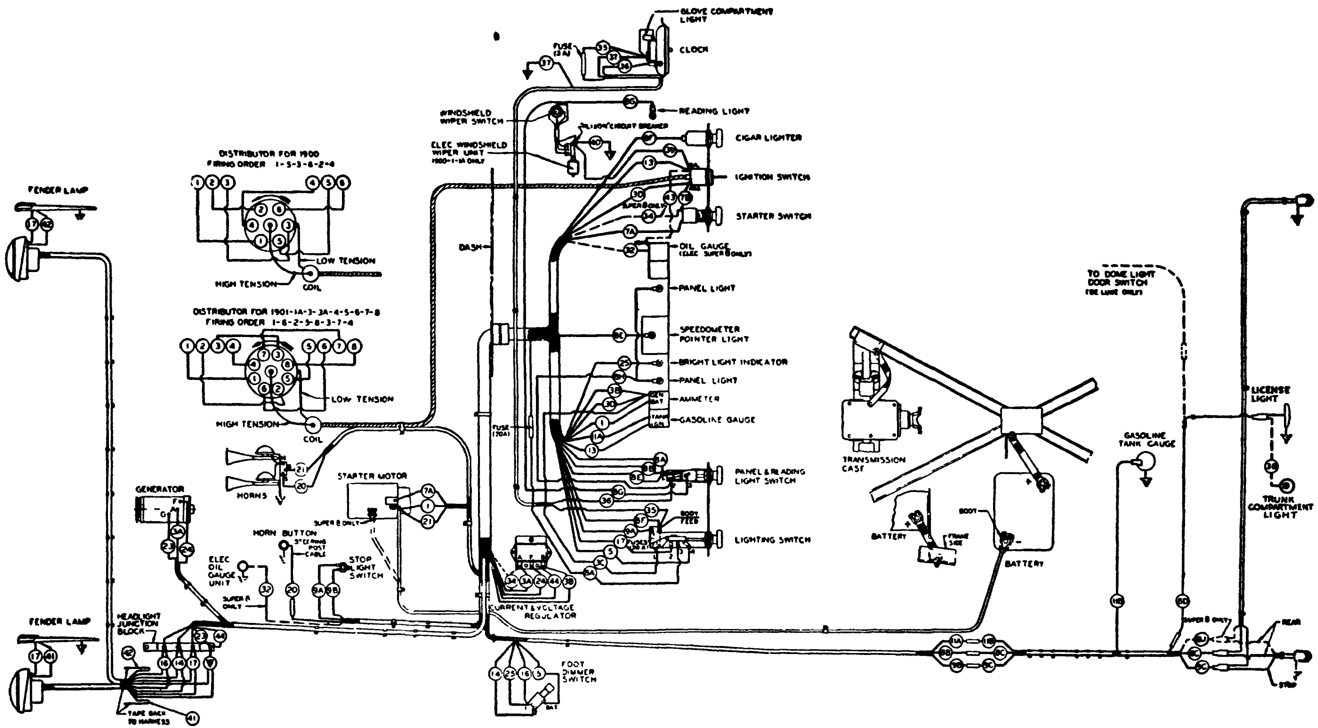
Clutch Long **Facings** Woven, 6″ x 10″ x ⅛″

Gear Ratio 45-11 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 24½″ x 1¾″ x 3/16″ **Clearance**
- **Rear** 24½″ x 1¾″ x 3/16″ **Clearance**
- **Hand** Rear Service

Lining



PACKARD WIRING DIAGRAM, 1941, MODEL 6-CYLINDER SERIES 1900

Courtesy of Packard Motor Car Company

Packard **Model 6-Cylinder 110** **Year 1941** **Series 1900**

Battery Willard **Type** 15-Plate **Volts** 6 **Amps.** 95

Frame Connection Positive

Lighting **Head Lights** 40-30 Watts, 6-8 Volts

Tail and Stop 3-21 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts

Parking Lights 1½ C.P., 6-8 Volts

Starter and Generator Delco Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed**

Regulation Volt. and Current **Cut-in** 6.5-7.0 Volts

Relay Air Gap .034″-.038″ **Contact Gap** .015″

Ignition Auto-Lite **Contact Breaker Gap** .018″ to .022″

Spark Plug—Size 10 M.M. **Gap** .025″ to .030″

Firing Order 1-5-3-6-2-4

Timing 6° B.T.C.

Engine **Bore** 3½″ **Stroke** 4¼″ **Taxable H.P.** 29.4

Piston Ring—Width Oil 1—3/16″ Comp. 2—Upper 3/32″, Lower ⅛″

Diam. 3½″ **Gap** .007″ on all

Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 39° A.B.C.

Intake Clearance .007″ Warm

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .010″ Warm

Carburetor Stromberg BXOV-26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 15 Qts.

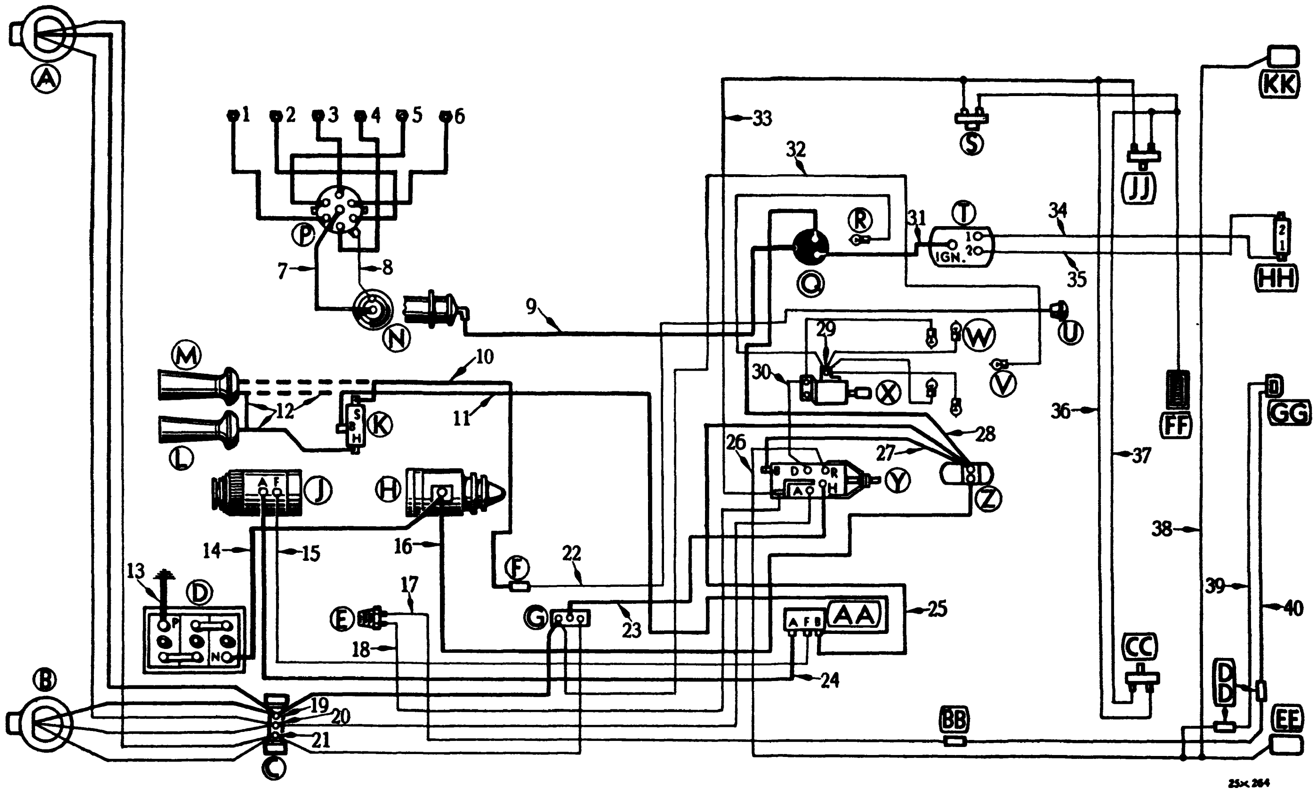
Steering **Camber** 1° +¾° −0° **Caster** ½°+ or −½° **Toe-in** 0

Clutch Long **Facings** Woven, 6″ x 9½″ x ⅛″

Gear Ratio 43-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 22⅝″ x 1¾″ x 3/16″ **Clearance**
- **Rear** 22⅝″ x 1¾″ x 3/16″ **Clearance**
- **Hand** Rear Service
- **Lining**



PLYMOUTH WIRING DIAGRAM, 1941, MODEL 6-CYLINDER

Courtesy of Chrysler Corporation

Plymouth **Model 6-Cylinder** **Year 1941**

Battery Auto-Lite **Type** 13-Plate **Volts** 6 **Amps.** 90
Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 45-35 Watts
Tail and Stop 3-21 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts
Parking Lights 1½ C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 34 Amps. **Speed** 2200 R.P.M.
Regulation Volt. and Current **Cut-in** 6.4 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 23.44
Piston Ring—Width Oil 2—5/32″ Comp. 2—Upper 3/32″, Lower ⅛″
Diam. 3⅛″ **Gap** .007″ on all
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 9° B.T.C. **Close** 47° A.B.C.
Intake Clearance .008″ Hot
Exhaust Timing—Open 47° B.B.C. **Close** 9° A.T.C.
Exhaust Clearance .010″ Hot

Carburetor Carter Ball and Ball D6 C2

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 14 Qts.

Steering **Camber** ¼° **Caster** −1° **Toe-in** 1/16″

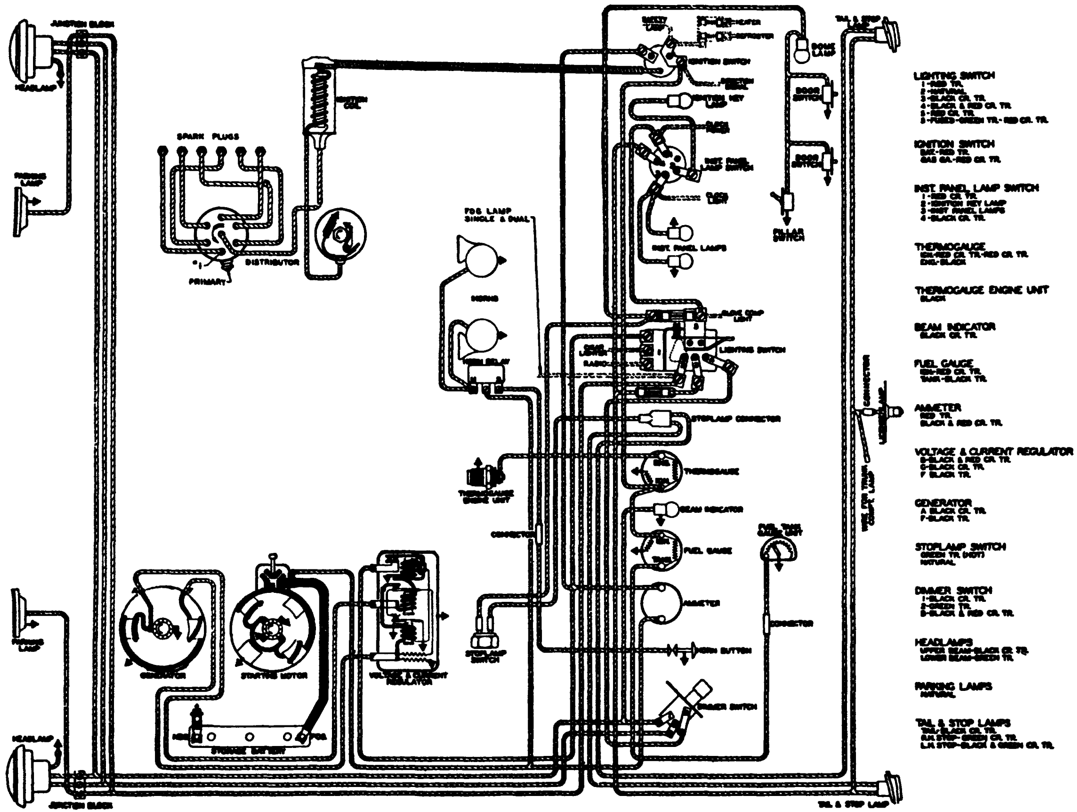
Clutch Borg **Facings** Woven, 6″ x 9¼″ x ⅛″

Gear Ratio 43-10 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 18″ x 2″ x 13/64″ **Clearance** Slight drag, 4 notches back
- **Rear** 18″ x 2″ x 13/64″ **Clearance** Slight drag, 4 notches back
- **Hand** Transmission 17 1/16″ x 2″ x 5/16″ **Clearance** .015″

Lining Woven



PONTIAC WIRING DIAGRAM, 1941, MODEL 6-CYLINDER

Courtesy of Pontiac Motor Company

Pontiac **Model 6-Cylinder** **Year 1941**

Battery Delco **Type** 15 E2-W **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Head Lights** Sealed Beam, 6-8 Volts
Tail and Stop 3-21 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts
Parking Lights 3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 30 Amps. **Speed** 1700 R.P.M.
Regulation Volt. and Current **Cut-in**
Relay Air Gap .020″ **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 4° B.T.C.

Engine **Bore** 3$\frac{9}{16}$″ **Stroke** 4″ **Taxable H.P.** 30.4
Piston Ring—Width Oil 1—$\frac{3}{16}$″ Comp. 2—$\frac{3}{32}$″
Diam. 3$\frac{9}{16}$″ **Gap** .009″-.014″
Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .011″-.013″ Hot
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.B.C.
Exhaust Clearance .011″-.013″ Hot

Carburetor Carter 494S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts.

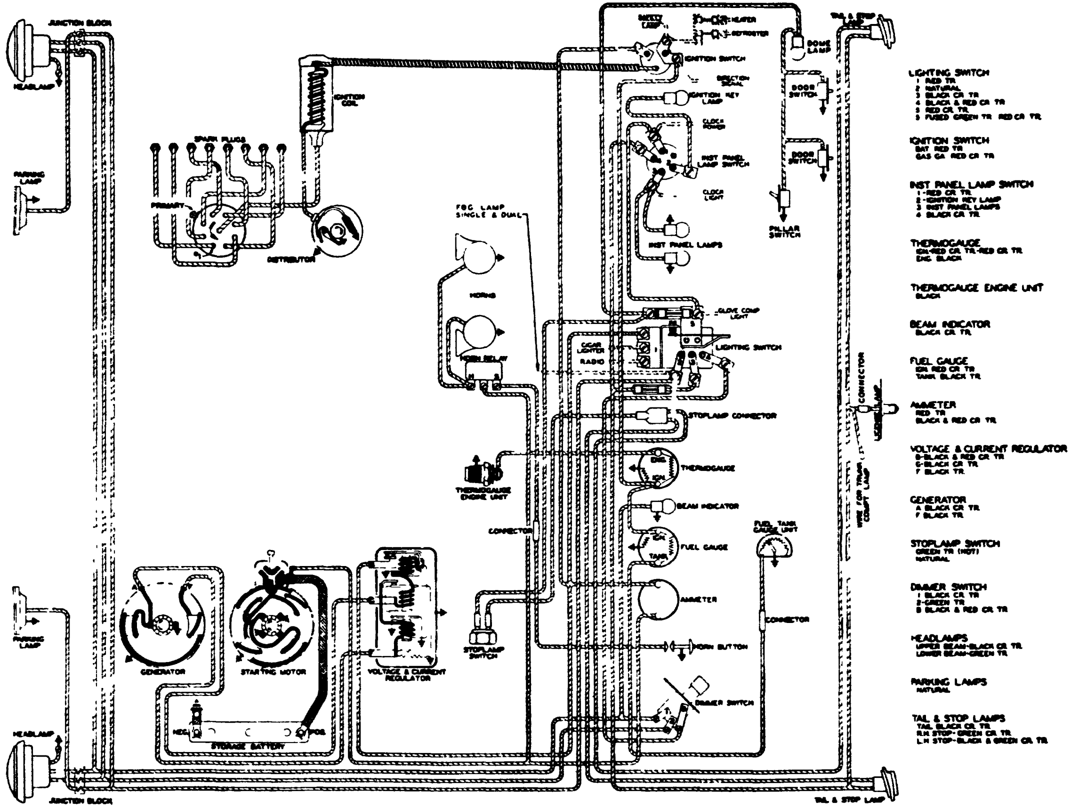
Steering **Camber** 0° **Caster** ¾° **Toe-in** 0″ to $\frac{1}{16}$″

Clutch Inland **Facings** Moulded, 6″ x 9⅛″ x ⅛″

Gear Ratio 41-10 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 21$\frac{5}{16}$″ x 1¾″ x $\frac{3}{16}$″ **Clearance** .015″
- **Rear** 21$\frac{5}{16}$″ x 1¾″ x $\frac{3}{16}$″ **Clearance** .015″
- **Hand** Rear Service
- **Lining** Moulded



PONTIAC WIRING DIAGRAM, 1941, MODEL 8-CYLINDER

Courtesy of Pontiac Motor Company

Pontiac **Model 8-Cylinder** **Year 1941**

Battery Delco **Type** 15-Plate **Volts** 6 **Amps.** 100

Frame Connection Negative

Lighting **Head Lights** Sealed Beam, 6-8 Volts

Tail and Stop 3-21 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts

Parking Lights 3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 30 Amps. **Speed** 1700 R.P.M.

Regulation Volt. and Current **Cut-in**

Relay Air Gap .020″ **Contact Gap**

Ignition Delco-Remy **Contact Breaker Gap** .015″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing 4° B.T.C.

Engine **Bore** 3¼″ **Stroke** 3¾″ **Taxable H.P.** 33.8

Piston Ring—Width Oil 1—3/16″ Comp. 2—3/32″

Diam. 3¼″ **Gap** .009″-.014″

Oiling—Type Pump, Gear **Capacity** 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.

Intake Clearance .011″-.013″ Hot

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .011″-.013″ Hot

Carburetor Carter 469SM

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 19½ Qts.

Steering **Camber** 0° **Caster** −¾° **Toe-in** 0″ to 1/16″

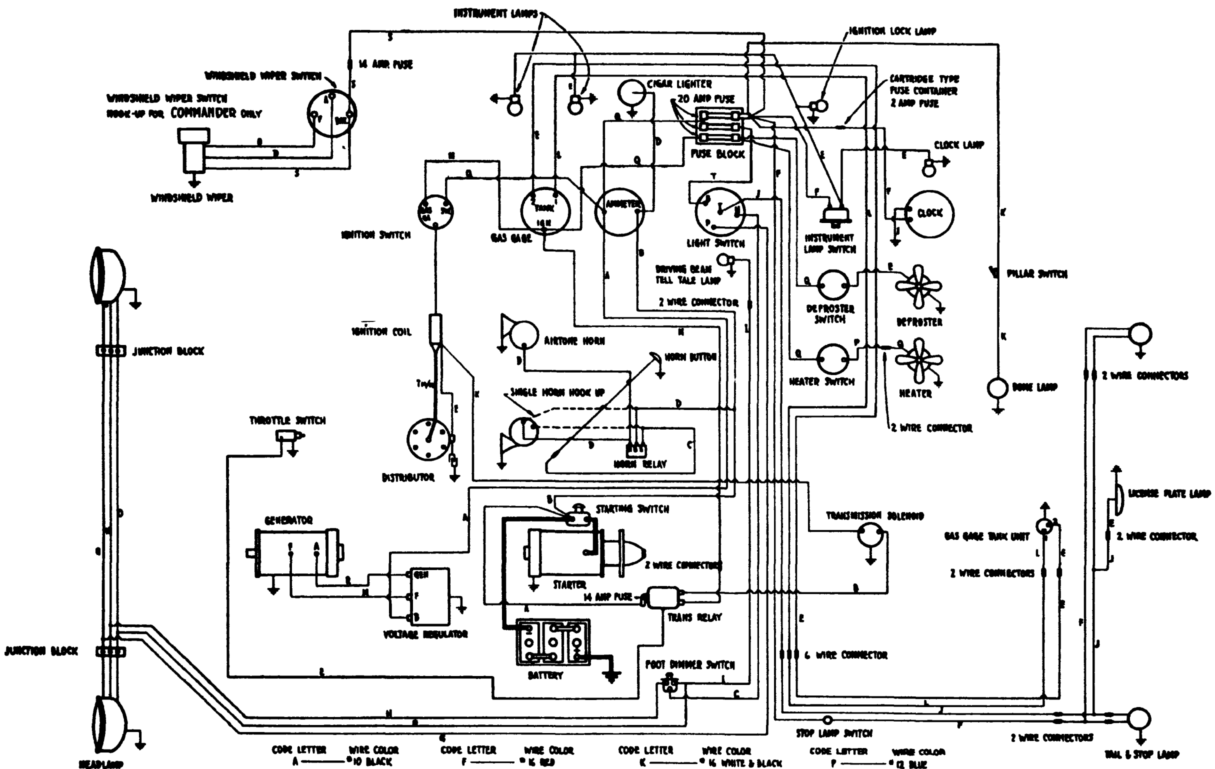
Clutch Inland **Facings** Moulded, 6″ x 9½″ x ⅛″

Gear Ratio 4.1-1 **Type** Hypoid

Axle Semi-Floating

Brakes Bendix Hydraulic
- **Front** 21 5/16″ x 1¾″ x 3/16″ **Clearance** .015″
- **Rear** 21 5/16″ x 1¾″ x 3/16″ **Clearance** .015″
- **Hand** Rear Service

Lining Moulded



CODE LETTER	WIRE COLOR	CODE LETTER	WIRE COLOR	CODE LETTER	WIRE COLOR	CODE LETTER	WIRE COLOR
A	#10 BLACK	F	#16 RED	K	#16 WHITE & BLACK	P	#12 BLUE
B	#10 RED	G	#16 GREEN	L	#16 BLACK & RED	Q	#12 BLACK
C	#12 RED & BLACK	H	#14 YELLOW	M	#12 WHITE & BLACK	R	#10 WHITE
D	#14 BLACK	I	#16 WHITE	N	#16 YELLOW & RED	S	#14 GREEN
E	#16 BLACK	J	#16 BLACK & OAK	O	#14 RED	T	#12 RED

STUDEBAKER WIRING DIAGRAM, 1941, MODELS CHAMPION AND COMMANDER

Courtesy of Studebaker Corporation

Studebaker **Model 6-Cylinder** **Year 1941** **Series Champion**

Battery Willard **Type** WHT-1-13R **Volts** 6 **Amps.** 90

Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6-8 Volts

Tail and Stop 3-21 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts

Parking Lights 3 C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed** 2250 R.P.M.

Regulation Volt. and Current **Cut-in** 6.4 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 14 M.M. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing 2° B.T.C.

Engine **Bore** 3″ **Stroke** 4″ **Taxable H.P.** 21.6

Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″ and ⅛″

Diam. 3″ **Gap** .007″ to .017″ on all

Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.

Intake Clearance .016″ Cold

Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance .016″ Cold

Carburetor Carter 496S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 10 Qts.

Steering **Camber** ¼° to ¾° **Caster** 1° to 2° **Toe-in** 1/16″ to ⅛″

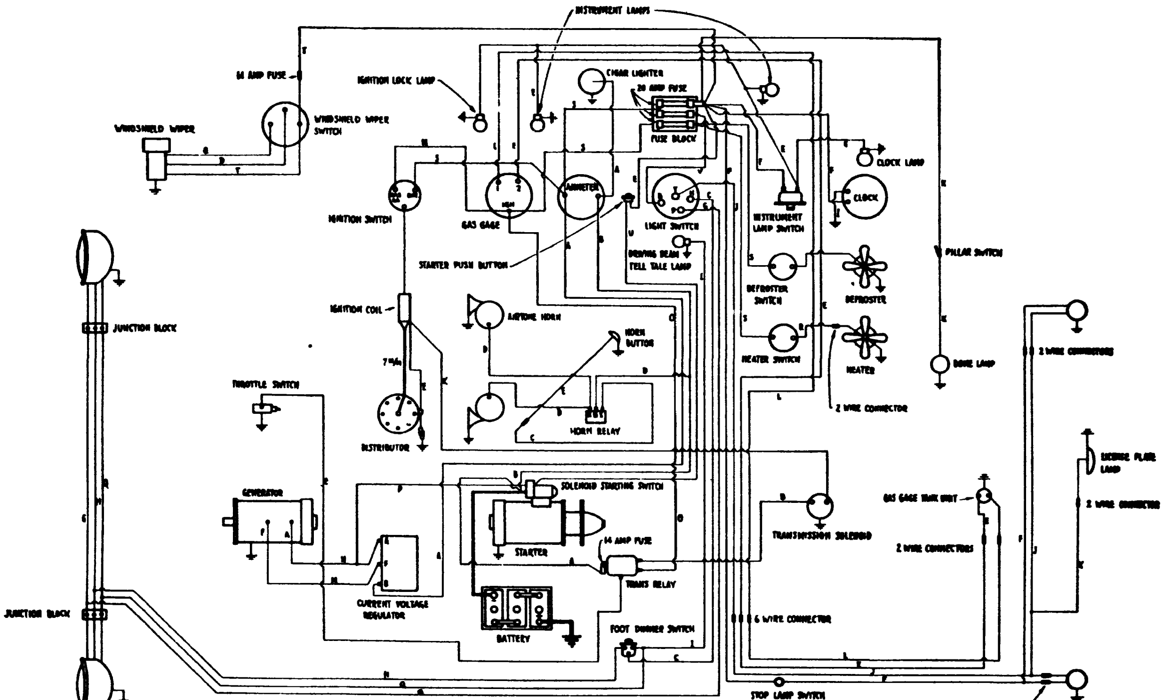
Clutch Borg **Facings** Composition, Moulded and Woven, 5⅛″ x 7⅞″ x .125″

Gear Ratio 4.56-1 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 18″ x 1¾″ x 3/16″ **Clearance Toe** .010″ **Heel** .005″
- **Rear** 18″ x 1¾″ x 3/16″ **Clearance Toe** .010″ **Heel** .005″
- **Hand** Rear Service

Lining Moulded



CODE LETTER	WIRE COLOR	CODE LETTER	WIRE COLOR	CODE LETTER	WIRE COLOR	CODE LETTER	WIRE COLOR
A	#10 BLACK	F	#16 RED	L	#16 BLACK & RED	R	#12 BLUE
B	#10 RED	G	#16 GREEN	M	#12 WHITE & BLACK	S	#12 BLACK
C	#12 RED & BLACK	H	#14 YELLOW	N	#10 WHITE	T	#14 GREEN
D	#14 BLACK	I	#16 WHITE	O	#16 YELLOW & RED	U	#16 WHITE & RED
E	#16 BLACK	J	#16 BLACK & OAK	P	#16 BLACK & GREEN	V	#12 RED
		K	#16 WHITE & BLACK	Q	#14 RED		

STUDEBAKER WIRING DIAGRAM, 1941, MODEL PRESIDENT

Courtesy of Studebaker Corporation

Studebaker **Model 8-Cylinder** **Year 1941** **Series President**

Battery Willard **Type** WT-1-15R **Volts** 6 **Amps.** 95

Frame Connection Positive

Lighting **Head Lights** Sealed Beam, 6-8 Volts

Tail and Stop 3-21 C.P., 6-8 Volts. **Dash** 1½ C.P., 6-8 Volts

Parking Lights 3 C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed** 2250 R.P.M.

Regulation Volt. and Current **Cut-in** 6.4 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″

Spark Plug—Size 18 M.M. **Gap** .025″

Firing Order 1-6-2-5-8-3-7-4

Timing T.D.C.

Engine **Bore** 3 1/16″ **Stroke** 4¼″ **Taxable H.P.** 30

Piston Ring—Width Oil 1—3/16″ Comp. 2—⅛″

Diam. 3 1/16″ **Gap** .013″ to .021″ on all

Oiling—Type Pump, Gear **Capacity** 8 Qts.

Valves **Intake Timing—Open** 15° B.T.C. **Close** 49° A.B.C.

Intake Clearance .016″ Cold

Exhaust Timing—Open 54° B.B.C. **Close** 10° A.T.C.

Exhaust Clearance .016″ Cold

Carburetor Stromberg AAV26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 15 Qts.

Steering **Camber** ½° **Caster** ¼° to ¾° **Toe-in** 1/16″ to ⅛″

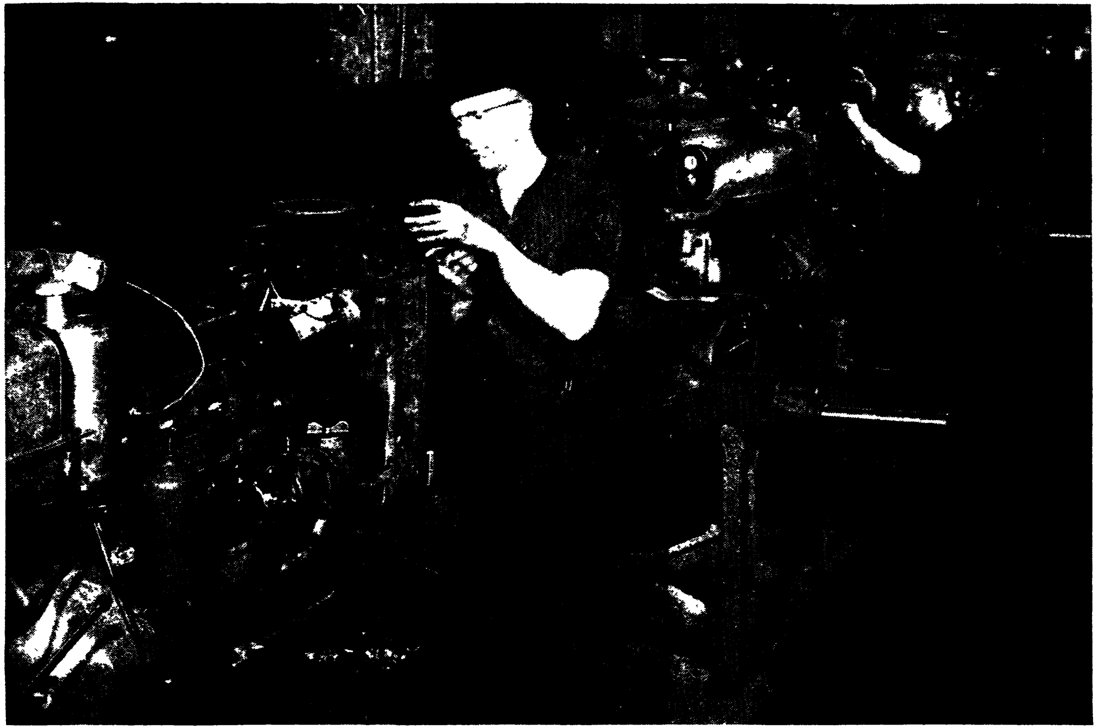
Clutch Borg **Facings** Composition, Woven and Moulded, 6″ x 9.5″ x .125″

Gear Ratio 4.55-1 **Type** Hypoid

Axle Semi-Floating

Brakes Lockheed Hydraulic
- **Front** 19 11/16″ x 2¼″ x 3/16″ **Clearance Toe** .010″ **Heel** .005″
- **Rear** 19 11/16″ x 2¼″ x 3/16″ **Clearance Toe** .010″ **Heel** .005″
- **Hand** Rear Service

Lining Moulded



MOTOR ASSEMBLY LINE AT THE FARMALL WORKS OF THE INTERNATIONAL HARVESTER COMPANY, ROCK ISLAND, ILLINOIS

Courtesy of International Harvester Company

Index
Wiring Diagrams
and
Data Sheets
for
1942 Cars

WIRING DIAGRAMS AND DATA SHEETS

CHART OF ABBREVIATIONS

GENERAL

Amps.—Amperes
V.—Volts
C.P.—Candle Power
R.& L. of Firing Order—Right and left determined from driver's seat
Max. Chg. Rate—Maximum Charging Rate
R.P.M.—Revolutions per Minute
D.C.—Double Contact
MM.—Millimeters
Side Lights—Side or Parking Lights
Air Gap—Contacts Closed
Oil—Oil Ring
Comp.—Compression Ring

IGNITION AND VALVE TIMING

B.T.D.C. or B.T.C.—Before Top Dead Center
B.B.D.C. or B.B.C.—Before Bottom Dead Center
A.B.D.C. or A.B.C.—After Bottom Dead Center
A.T.D.C. or A.T.C.—After Top Dead Center
T.D.C. at Retard—Top Dead Center; Spark Control Retarded
12° past T.D.C.—Piston 12° past T.D.C. Spark Control Retarded
2½" before T.D.C.—Piston 2½", on Flywheel, before T.D.C.
"Ret" at Retard—Marks "Ret" on Flywheel

LUBRICATION SYSTEM

Gals.—Gallons
Qts.—Quarts
Press.—Pressure to Main Bearings
Splash—Pressure Circulating Splash
Splash—Connecting Rod Dips

REAR AXLE

Semi—Semi-Floating
¾ Flt.—Three-quarters Floating
Full Flt.—Full Floating

CLUTCH

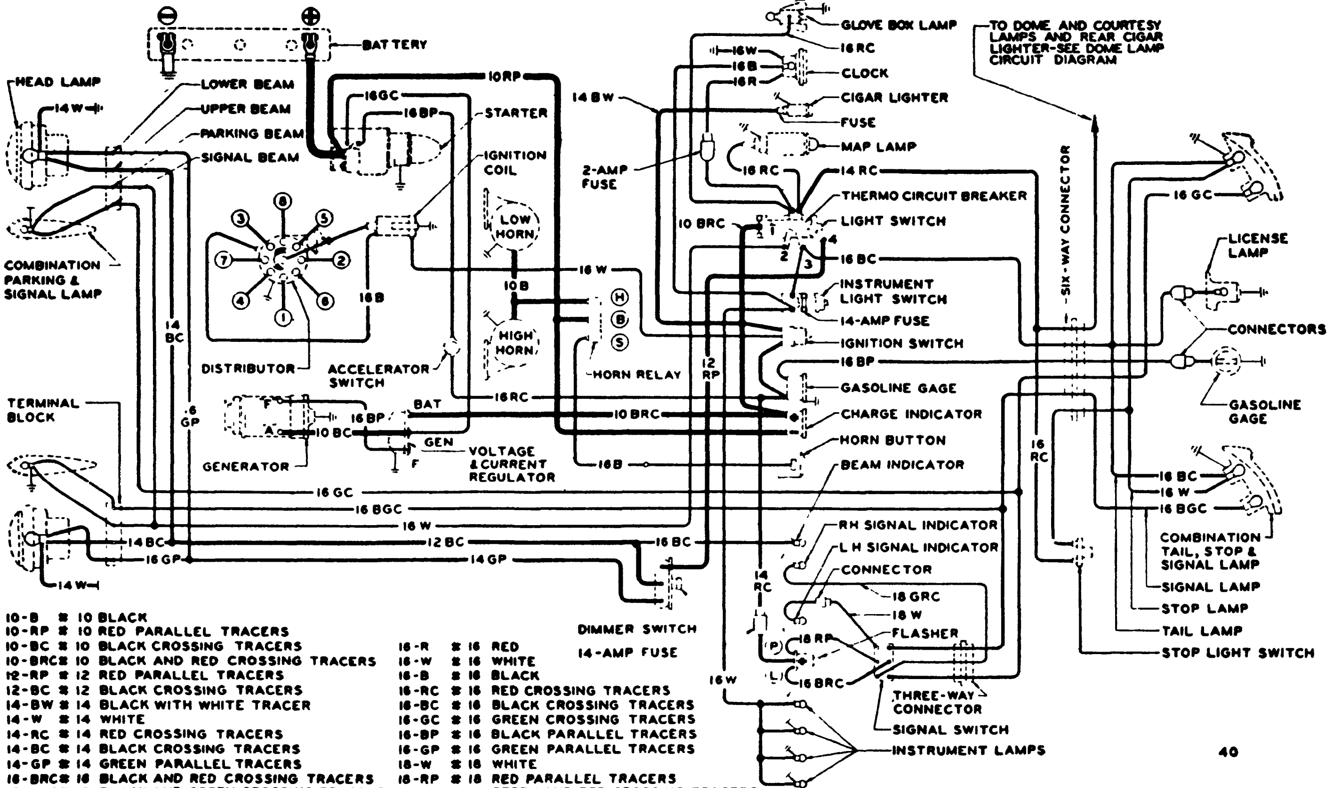
Disc.—Multiple disc, either wet or dry
Plate—Single or Double Plate Type

BRAKES

Front—Front Wheels
Rear—Rear Wheels
Hand—Hand Brake
Trans.—Transmission Brake

INDEX

1942 Wiring Diagrams and Data Sheets



10-B	# 10	BLACK
10-RP	# 10	RED PARALLEL TRACERS
10-BC	# 10	BLACK CROSSING TRACERS
10-BRC	# 10	BLACK AND RED CROSSING TRACERS
12-RP	# 12	RED PARALLEL TRACERS
12-BC	# 12	BLACK CROSSING TRACERS
14-BW	# 14	BLACK WITH WHITE TRACER
14-W	# 14	WHITE
14-RC	# 14	RED CROSSING TRACERS
14-BC	# 14	BLACK CROSSING TRACERS
14-GP	# 14	GREEN PARALLEL TRACERS
16-BRC	# 16	BLACK AND RED CROSSING TRACERS
16-BGC	# 16	BLACK AND GREEN CROSSING TRACERS
16-R	# 16	RED
16-W	# 16	WHITE
16-B	# 16	BLACK
16-RC	# 16	RED CROSSING TRACERS
16-BC	# 16	BLACK CROSSING TRACERS
16-GC	# 16	GREEN CROSSING TRACERS
16-BP	# 16	BLACK PARALLEL TRACERS
16-GP	# 16	GREEN PARALLEL TRACERS
18-W	# 18	WHITE
18-RP	# 18	RED PARALLEL TRACERS
18-GRC	# 18	GREEN AND RED CROSSING TRACERS

BUICK WIRING DIAGRAM, 1941, SERIES 40

Courtesy of Buick Motor Division, G. M. S. C.

Buick Model 8-Cylinder **Year 1942 Series 40**

Battery Delco-Remy **Type** 15E-2-W **Volts** 6-8 **Amps.** 100
40-50 Series **Frame Connection** Negative

Lighting **Headlights** 45-35 Watts, Sealed Beam, 6-8 Volts
Tail and Stop 3 C.P., 21 C.P., 6-8 Volts **Dash** 1.5 C.P., 6-8 Volts
Parking Lights 21 C.P., 3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Remy **Max. Chg. Rate** 32-34 **Speed** 25 M.P.H.
Regulation Volt. and Current **Cut-in** 18-20 M.P.H.
Relay Air Gap .018″-.022″ **Contact Gap** .018″-.025″

Ignition Remy **Contact Breaker Gap** .0125″-.0175″
Spark Plug—Size AC 14 MM. **Gap** .023″-.028″
Firing Order 1-6-2-5-8-3-7-4
Timing 4° B.T.C. Single Carb., 6° Compound Carb.

Engine **Bore** 3 3/32″ **Stroke** 4 1/8″ **Taxable H.P.** 30.63, 40 and 50 Series
Piston Ring—Width Oil 2—5/32″, Comp. 2—3/16″
Diam. 3 3/32″ **Gap** .090″-.020″ All Rings
Oiling—Type Gear, Pump **Capacity** 7½ Qts. Dry

Valves **Intake Timing—Open** 13° B.T.C. **Close** 68° A.B.C.
Intake Clearance .015″
Exhaust Timing—Open 55° B.B.C. **Close** 22° A.T.C.
Exhaust Clearance .015″

Carburetor Stromberg AAV-16 Single, AAV-16 front, AA-1 rear Comp. Carb. 40-50
Carter 487S, Single, 528S front, 529S rear Comp. Carb.

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 14¼ Qts. Heater

Steering **Camber** 1/8° to 1 1/8° **Caster** 3/8° ± 3/8° **Toe-in** 0 to 1/16″

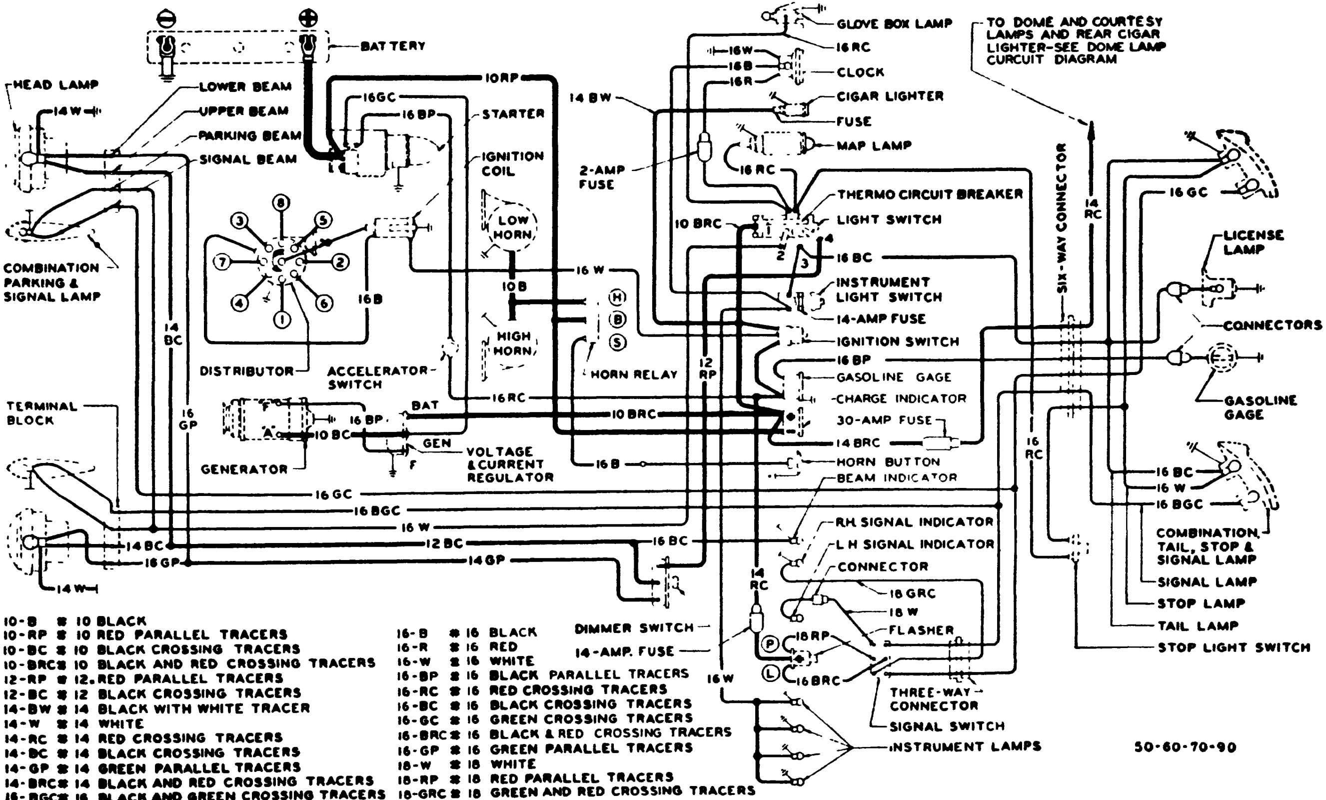
Clutch Buick **Facings** Woven, 6″ x 10″ x .125″, 40-50 Series

Gear Ratio 4.4 and 4.1 **Type** Hypoid Spiral Bevel

Axle Semifloating

Brakes Hydraulic
- **Front** 22 11/16″ x 1¾″ x 5/16″ **Clearance Toe** .015″ **Heel** .015″
- **Rear** 22 11/16″ x 1¾″ x 5/16″ **Clearance Toe** .015″ **Heel** .015″
- **Hand** Rear Service

Ferodo **Lining** Primary Woven **Diagram**
Manhattan Raybestos-Secondary Moulded



BUICK WIRING DIAGRAM, 1941, SERIES 50-60-70-90

Courtesy of Buick Motor Division, G. M. S. C.

Buick Model 8-Cylinder Year 1942 Series 50-60-70-90

Battery Delco-Remy **Type** 17E-2-W **Volts** 6 **Amps.** 120
60-70-90 Series **Frame Connection** Negative

Lighting **Headlights** 45-35 Watts, Sealed Beam, 6-8 Volts
Tail and Stop 3 C.P., 21 C.P., 6-8 Volts **Dash** 1.5 C.P., 6-8 Volts
Parking Lights 21 C.P., 3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Remy **Max. Chg. Rate** 32-34 Amps. **Speed** 25 M.P.H.
Regulation Volt. and Current **Cut-in** 18-20 M.P.H.
Relay Air Gap .018″-.022″ **Contact Gap** .018″-.025″

Ignition Remy **Contact Breaker Gap** .0125″-.0175″
Spark Plug—Size AC. 14 MM. **Gap** .023″-.028″
Firing Order 1-6-2-5-8-3-7-4
Timing 6° B.T.C. Compound Carb., Eng.

Engine **Bore** 3 7/16″ **Stroke** 4 5/16″ **Taxable H.P.** 37.81, 60-70-90 Series
Piston Ring—Width Oil 2—5/32″, Comp. 2—3/16″
Diam. 3 7/16″ **Gap** .010″-.020″ All Rings
Oiling—Type Gear, Pump **Capacity** 9 Qts. Dry

Valves **Intake Timing—Open** 14° B.T.C. **Close** 71° A.B.C.
Intake Clearance .015″
Exhaust Timing—Open 56° B.B.C. **Close** 25° A.T.C.
Exhaust Clearance .015″

Carburetor Stromberg AAV-16 front, AA-1 rear Comp. Carb.
Carter 533S front, 534S rear Comp. Carb.

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts. Heater

Steering **Camber** 3/8° to 7/8° **Caster** 3/8° ± 3/8° **Toe-in** 0″ to 1/16″

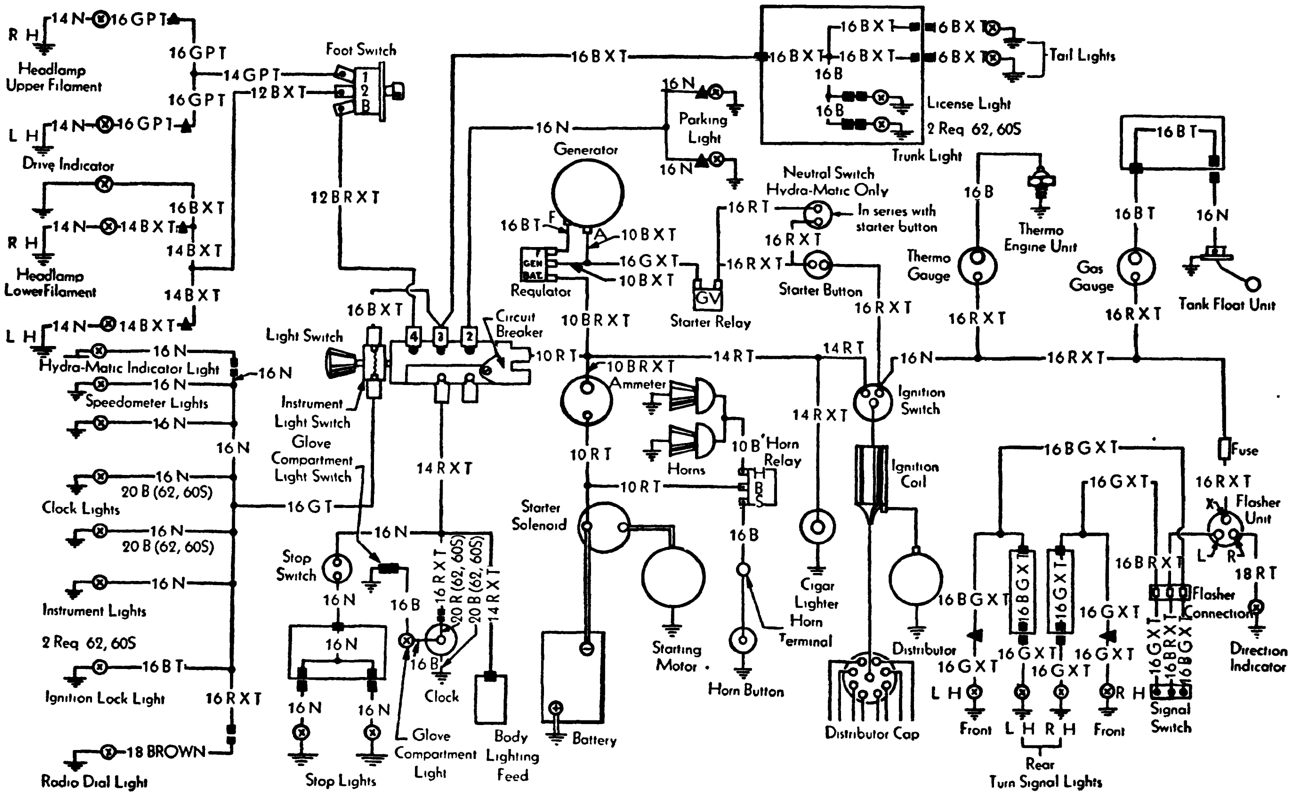
Clutch Buick **Facings** Woven, 6 1/2″ x 10 1/2″ x .125″ For 90 Series
50-60-70 as for 40

Gear Ratio 60-3.9, 70-4.1, 90-4.55 **Type** Hypoid Spiral Bevel

Axle Semifloating

Brakes Hydraulic
- **Front** 22 15/16″ x 2 1/4″ x 3/16″ **Clearance Toe** .015″ **Heel** .015″
- **Rear** 22 15/16″ x 2 1/4″ x 3/16″ **Clearance Toe** .015″ **Heel** .015″
- **Hand** Rear Service 90 Series 26 13/16″ x 2″ x 1/4″

Ferodo **Lining** Primary Woven **Diagram**
Manhattan Raybestos—Secondary Moulded



CADILLAC WIRING DIAGRAM, 1942, MODEL 8-CYLINDER
Courtesy of Cadillac Division, G.M.S.C.

Cadillac Model 8-Cylinder Year 1942 Series 42-61-62-63, 42-60S

Battery Delco-Remy **Type** 17K3W **Volts** 6 **Amps.** 115
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts **Dash** 2 C.P., 6-8 Volts
Parking Lights 21-3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 30 Amps. **Speed** 1750 R.P.M.
Regulation Volt. and Current **Cut-in** 6.1-6.6 Volts
Relay Air Gap .018″-.022″ **Contact Gap** .018″-.025″

Ignition Delco-Remy **Contact Breaker Gap** .0125″-.0175″
Spark Plug—Size 10 MM. **Gap** .025″-.030″
Firing Order 1-8-7-3-6-5-4-2
Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 4½″ **Taxable H.P.** 39.20
Piston Ring—Width Oil 2—5/32″ Comp. 2—No. 1—3/32″, No. 2—⅛″
Diam. 3½″ **Gap** Oil .007″-.023″, Comp. 007″-.023″
Oiling—Type Gear, Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.
Intake Clearance Hydraulic Adjustment Compressed .030″-.070″
Exhaust Timing—Open 52° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Hydraulic Adjustment Compressed .030″-.070″

Carburetor Stromberg AAV-26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 25 Qts. less heater

Steering **Camber** −⅜° to +⅜° **Caster** −1¾° to −2¾° **Toe-in** 1/32″ to 3/32″

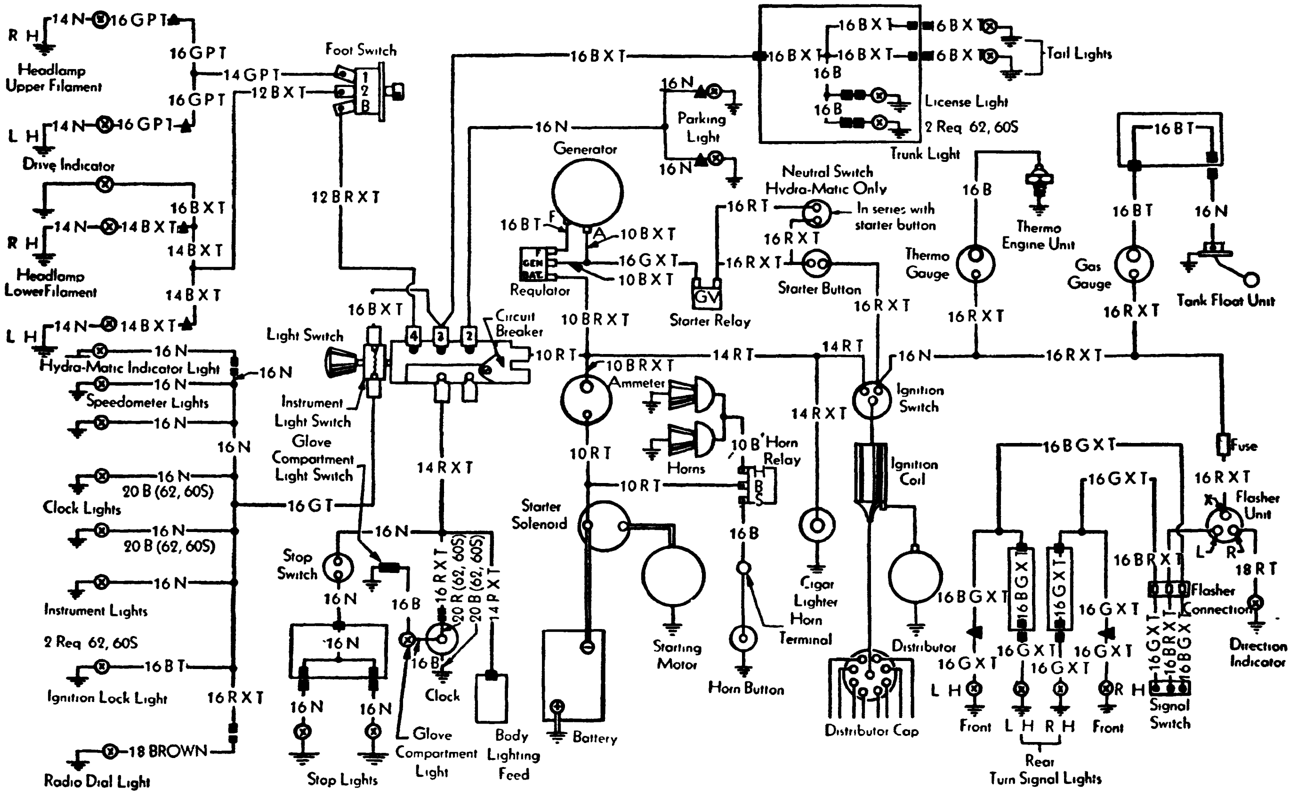
Clutch **Facings** 7″ x 10½″ x .137″ Woven

Gear Ratio 3.77 to 1 **Type** Hypoid

Axle Semifloating

Brakes Hydraulic
- **Front** 24½″ x 2¼″ x 3/16″ **Clearance** .007″-.010″
- **Rear** 24½″ x 2″ x 3/16″ **Clearance** .007″-.010″
- **Hand** Rear Service

Lining **Diagram**



CADILLAC WIRING DIAGRAM, 1942, MODEL 8-CYLINDER
Courtesy of Cadillac Division, G.M.S.C.

Cadillac Model 8-Cylinder Year 1942 Series 42-67-75 42-75 Comm.

Battery Delco-Remy **Type** 17K3W **Volts** 6 **Amps.** 115
For Comm. 19Q3W **Amps.** 125
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts **Dash** 2 C.P., 6-8 Volts
Parking Lights 21-3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco-Remy **Max. Chg. Rate** 30 Amps. **Speed** 1750 R.P.M.
Regulation Volt. and Current **Cut-in** 6.1-6.6 Volts
Relay Air Gap .018″-.022″ **Contact Gap** .018″-.025″

Ignition Delco-Remy **Contact Breaker Gap** .0125″-.0175″
Spark Plug—Size 10 MM. **Gap** .025″-.030″
Firing Order 1-8-7-3-6-5-4-2
Timing 5° B.T.C.

Engine **Bore** 3½″ **Stroke** 4½″ **Taxable H.P.** 39.20
Piston Ring—Width Oil 2—5/32″, Comp. 2—No. 1—3/32″, No. 2—⅛″
Diam. 3½″ **Gap** Oil .007″-.023″, Comp. .007″-.023″
Oiling—Type Gear, Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 42° A.B.C.
Intake Clearance Hydraulic Adjustment Compressed .030″-.070″
Exhaust Timing—Open 52° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Hydraulic Adjustment Compressed .030″-.070″

Carburetor Stromberg AAV-26

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 25 Qts. less heater

Steering **Camber** −⅜° to +⅜° **Caster** −1¾° to −2¾° **Toe-in** 1/32″ to 3/32″

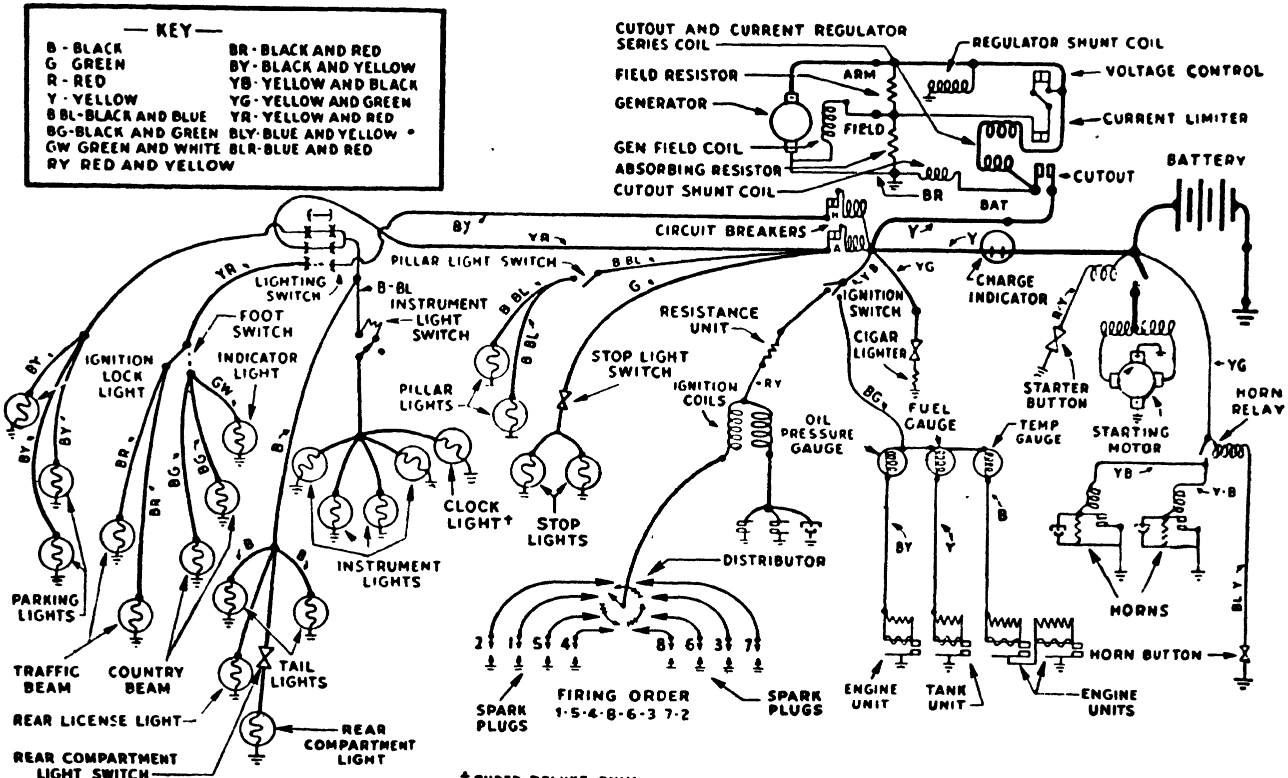
Clutch **Facings** 7″ x 11″ x .137″ Woven

Gear Ratio 4.27 to 1 **Type** Hypoid

Axle Semifloating

Brakes Hydraulic
- **Front** 24½″ x 2¼″ x 3/16″ **Clearance** .007″-.010″
- **Rear** 24½″ x 2½″ x 3/16″ **Clearance** .007″-.010″
- **Hand** Rear Service

Lining Series 42-75 Comm. Length of brake line is 25 15/16″ **Diagram**



† SUPER DELUXE ONLY

SIMPLIFIED WIRING DIAGRAM OF FORD CAR, DE LUXE AND SUPER DE LUXE MODELS, 1942

Courtesy of Ford Motor Company

Ford Model 8-Cylinder **Year 1942 Series**

Battery Own **Type** 17-Plate **Volts** 6 **Amps.** 120

Frame Connection Positive

Lighting **Headlights** Sealed Beam, 6-8 Volts

Tail and Stop 21-3 C.P., 6-8 Volts **Dash** 1 C.P., 6-8 Volts

Parking Lights

Starter and Generator Own

Generator **Max. Chg. Rate** 32 Amps. **Speed** 1100 R.P.M.

Regulation Volt. and Current **Cut-in** 7 Volts

Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″ to .016″

Spark Plug—Size 14 MM. **Gap** .027″

Firing Order 1-5-4-8-6-3-7-2

Timing 4° B.T.C.

Engine **Bore** 3.062″ **Stroke** 3.75″ **Taxable H.P.** 30

Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″

Diam. 3.062″ **Gap** .012″ on all

Oiling—Type Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 44° A.B.C.

Intake Clearance .012″ Cold

Exhaust Timing—Open 48° B.B.C. **Close** 6° A.T.C.

Exhaust Clearance .015″ Cold

Carburetor Down Draft Ford

Cooling System 2 Centrifugal **Type** Pump, Belt **Capacity** 22 Qts.

Steering **Camber** 1° **Caster** 8° **Toe-in** 1/8″

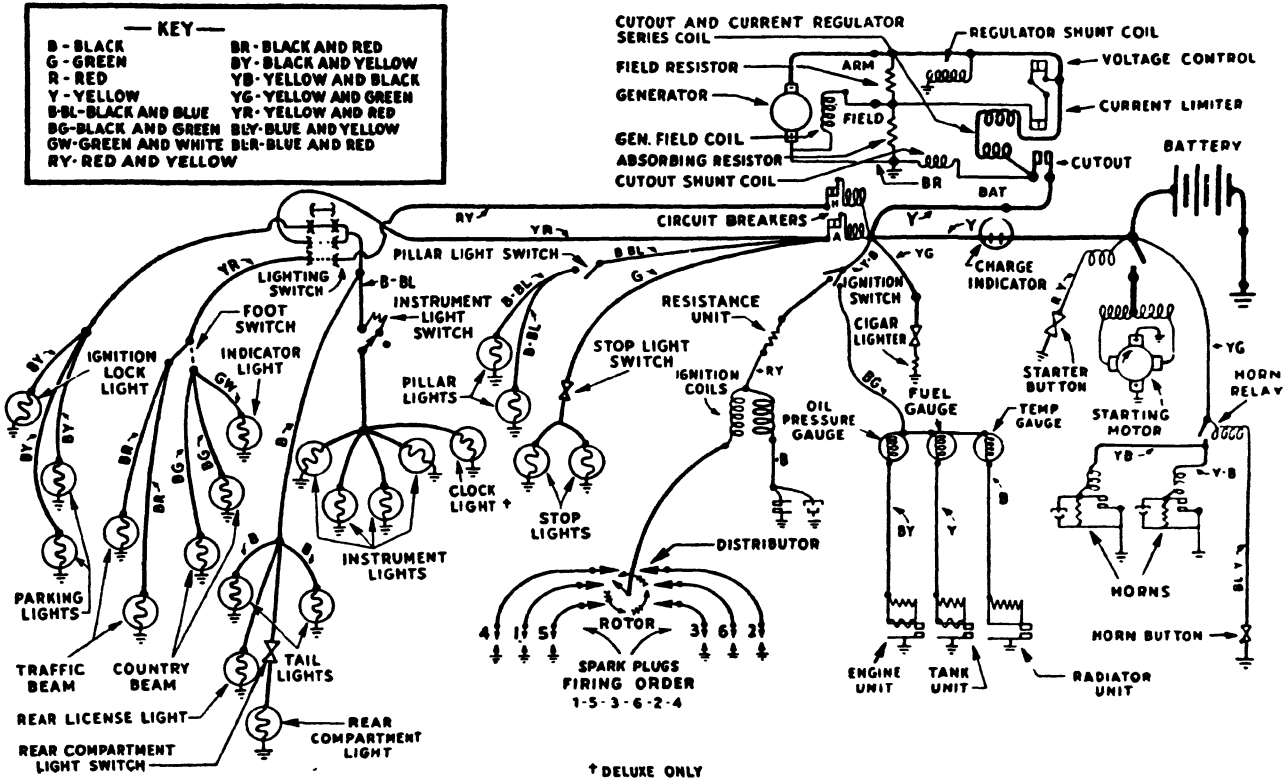
Clutch Centrifugal **Facings** Moulded 5¾″ x 9″ x .137″

Gear Ratio 3.78 to 1 **Type** Spiral

Axle ¾-Floating

Brakes Hydraulic
- **Front** 23¼″ x 1¾″ x .20″ **Clearance Toe** **Heel**
- **Rear** 23¼″ x 1¾″ x .20″ **Clearance Toe** **Heel**
- **Hand** Rear Service

Lining Moulded **Diagram**



SIMPLIFIED WIRING DIAGRAM OF 6-CYLINDER FORD CAR, 1942

Courtesy of Ford Motor Company

Ford Model 6-Cylinder **Year 1942 Series**

Battery **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts **Dash** 1 C.P., 6-8 Volts
Parking Lights

Starter and Generator Own

Generator **Max. Chg. Rate** 32 Amps. **Speed** 1100 R.P.M.
Regulation Volt. and Current **Cut-in**
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .015″
Spark Plug—Size 14 MM. **Gap** .027″
Firing Order 1-5-3-6-2-4
Timing 4° B.T.C.

Engine **Bore** 3.3″ **Stroke** 4.4″ **Taxable H.P.** 26.13
Piston Ring—Width Comp. 2—.0915″ to .0920″, Oil 1—.186″ to .1865″
Diam. 3.30″ **Gap** .012″ to .017″ on all •
Oiling—Type Gear, Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 3° B.T.C. **Close** 41.0° A.B.C.
Intake Clearance .013″ Cold
Exhaust Timing—Open 48° B.B.C. **Close** 6° A.T.C.
Exhaust Clearance .013″ Cold

Carburetor Down Draft

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 15 Qts.

Steering **Camber** 1° **Caster** 8° **Toe-in** 1/16″

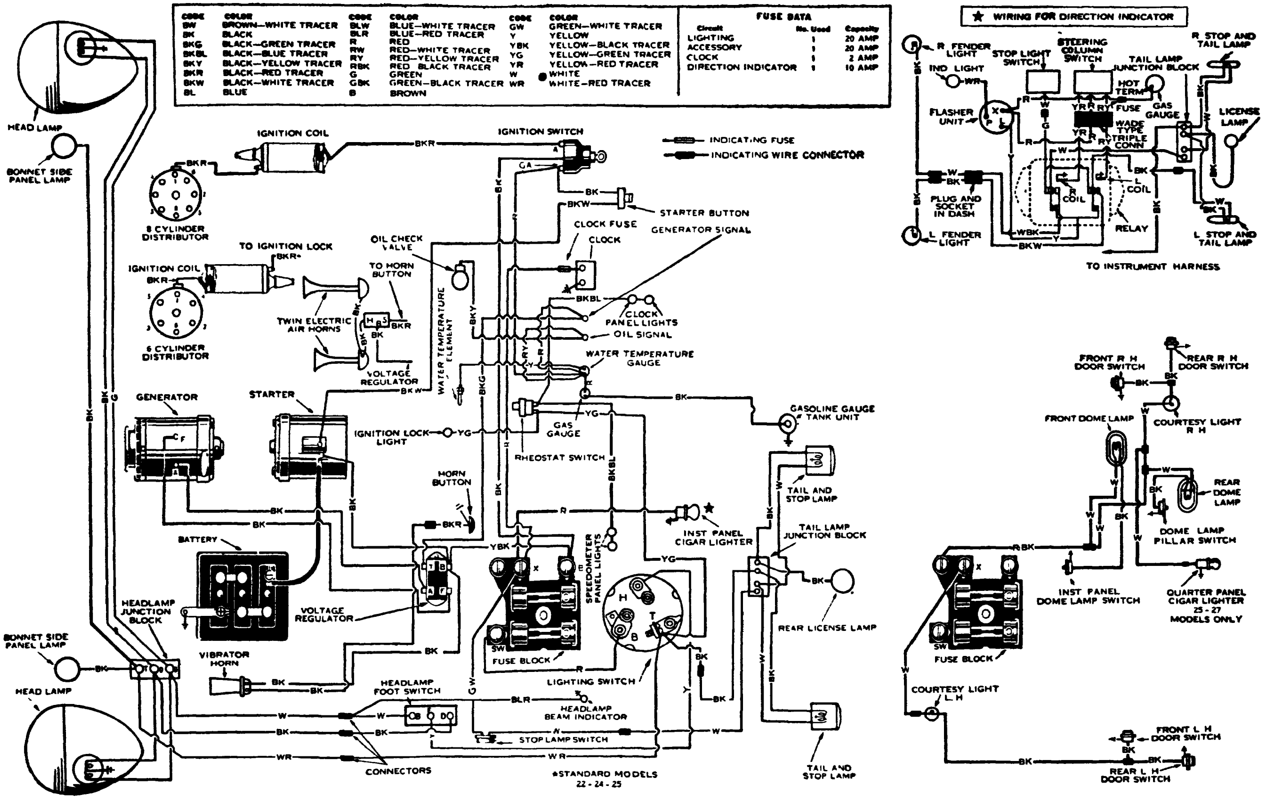
Clutch Semi-Centrifugal **Facings** 10.0″ x .0125″

Gear Ratio 7.78 to 1 **Type** Spiral

Axle ¾-Floating

Brakes Hydraulic
- **Front** 23¼″ x 1¾″ x .20″ **Clearance Toe** **Heel**
- **Rear** 23¼″ x 1¾″ x .20″ **Clearance Toe** **Heel**
- **Hand** Rear Service

Lining Moulded **Diagram**



HUDSON WIRING DIAGRAM, 1942, MODELS 6- AND 8-CYLINDER

Courtesy of Hudson Motor Car Company

Hudson Model 6-Cylinder Year 1942 Series 20T, 20P, 20C

Battery National **Type** 51 **Volts** 6 **Amps.**
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts **Dash** 1 and 2 C.P., 6-8 Volts
Parking Lights 2 C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 34 Amps. **Speed** 2900 R.P.M. and Series 28
Regulation 3rd Brush **Cut-in** 5¾ M.P.H.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .032″
Firing Order 1-5-3-6-2-4
Timing ½″ B.T.C.

Engine **Bore** 3″ **Stroke** 4⅛″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 2—No. 1—3/16″, No. 2—5/32″ Comp. 2—3/32″
Diam. 3″ **Gap** .009″ to .011″
Oiling—Type Plunger **Capacity** 5½ Qts. Dry

Valves **Intake Timing—Open** 28° 30′ B.T.C. **Close** 68° 30′ A.B.C.
Intake Clearance .006 Hot
Exhaust Timing—Open 52° 40′ B.B.C. **Close** 32° 40′ A.T.C.
Exhaust Clearance .012″ Hot

Carburetor Carter

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

Steering **Camber** ¼° to ¾° **Caster** −¼° to +¼° **Toe-in** 0″ to 1/16″

Clutch Wet **Facings** 9″ also for Series 21 **Capacity** ¼ Pt.

Gear Ratio 4⅚ to 1 **Type** Helical Bevel

Axle Semifloating

Brakes Bendix Hydraulic
- **Front** 22⅛″ x 1¾″ x 7/32″ **Clearance** .0075″
- **Rear** 22⅛″ x 1¾″ x 7/32″ **Clearance** .0075″
- **Hand** Rear Service

Lining Primary Moulded, Secondary Woven **Diagram**

Hudson Model 6-Cylinder Year 1942 Series 21-22-28C

Battery National **Type** 51 **Volts** 6 **Amps.**
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 6-8 Volts
Tail and Stop 21.3 C.P., 6-8 Volts **Dash** 1 and 2 C.P., 6-8 Volts
Parking Lights 2 C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 34 Amps. **Speed** 3800 R.P.M.
Regulation **Cut-in** 5¾ M.P.H.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .032″
Firing Order 1-5-3-6-2-4
Timing ½″ B.T.C.

Engine **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 2—No. 1—3/16″, No. 2—5/32″ Comp. 2—3/32″
Diam. 3″ **Gap** .009″-.011″
Oiling—Type Plunger **Capacity** 5½ Qts. Dry

Valves **Intake Timing—Open** 10° 40′ B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 18° 44′ A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 13 Qts.

Steering **Camber** ¼° to ¾° **Caster** −¼° to +¼° **Toe-in** 0″ to 1/16″

Clutch Wet **Facings** 10″ **Capacity** ¼ Pt.

Gear Ratio Various **Type** Helical Bevel

Axle Semifloating

Brakes Bendix Hydraulic
- **Front** 22⅛″ x 1¾″ x 7/32″ **Clearance** .0075″
- **Rear** 22⅛″ x 1¾″ x 7/32″ **Clearance** .0075″
- **Hand** Rear Service

Lining Primary Moulded, Secondary Woven **Diagram**

Hudson **Model 8-Cylinder** **Year 1942** **Series 24, 25, 27**

Battery National **Type** 57 **Volts** 6 **Amps.**
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts **Dash** 1 and 2 C.P., 6-8 Volts
Parking Lights 2 C.P., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 34 Amps. **Speed** 3800 R.P.M.
Regulation 3rd Brush **Cut-in** 5¾ M.P.H.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .017″
Spark Plug—Size 14 MM. **Gap** .032″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine **Bore** 3″ **Stroke** 4½″ **Taxable H.P.** 28.8
Piston Ring—Width Oil 2—No. 1—3/16″, No. 2—5/32″, Comp. 2—3/32″
Diam. 3″ **Gap** .009″-.011″
Oiling—Type Plunger **Capacity** 9 Qts. Dry

Valves **Intake Timing—Open** 10° 40′ B.T.C. **Close** 60° A.B.C.
Intake Clearance .006″ Hot
Exhaust Timing—Open 50° B.B.C. **Close** 18° 44′ A.T.C.
Exhaust Clearance .008″ Hot

Carburetor Carter

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts.

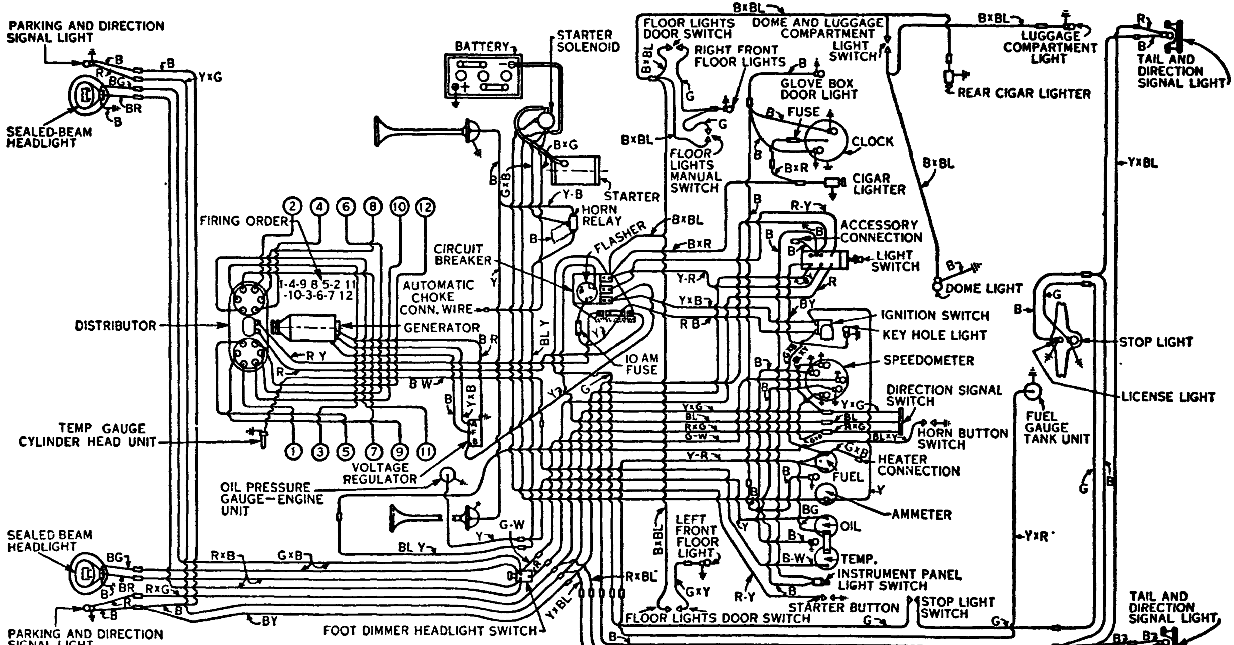
Steering **Camber** ¼° to ¾° **Caster** −¼° to +¼° **Toe-in** 0″ to 1/16″

Clutch Wet **Facings** 10″ **Capacity** ¼ Pt.

Gear Ratio Various **Type** Helical Bevel

Axle Semifloating

Brakes Bendix Hydraulic
Front 23 15/16″ x 1¾″ x 7/32″ **Clearance** .0075″
Rear 23 15/16″ x 1¾″ x 7/32″ **Clearance** .0075″
Hand Rear Service
Lining Primary Moulded, Secondary Woven **Diagram**



KEY

B = BLACK
BL = BLUE
G = GREEN
R = RED
Y = YELLOW
BG = BLACK & GREEN
BR = BLACK & RED
BY = BLACK & YELLOW

B-R = BLACK WITH RED TRACER
B-W = BLACK WITH WHITE TRACER
BL-Y = BLUE WITH YELLOW TRACER
R-B = RED WITH BLACK TRACER
R-Y = RED WITH YELLOW TRACER
Y-R = YELLOW WITH RED TRACER
G-W = GREEN WITH WHITE TRACER
Y-B = YELLOW WITH BLACK TRACER

BXG = BLACK WITH GREEN CROSS TRACER
BXR = BLACK WITH RED CROSS TRACER
BLXY = BLUE WITH YELLOW CROSS TRACER
BXBL = BLACK WITH BLUE CROSS TRACER
GXB = GREEN WITH BLACK CROSS TRACER
GXR = GREEN WITH RED CROSS TRACER
RXB = RED WITH BLACK CROSS TRACER

GXY = GREEN WITH YELLOW CROSS TRACER
RXBL = RED WITH BLUE CROSS TRACER
RXG = RED WITH GREEN CROSS TRACER
YXB = YELLOW WITH BLACK CROSS TRACER
YXBL = YELLOW WITH BLUE CROSS TRACER
YXG = YELLOW WITH GREEN CROSS TRACER
YXR = YELLOW WITH RED CROSS TRACER

LINCOLN-ZEPHYR WIRING DIAGRAM, V-12 MODEL, 1942

Courtesy of Ford Motor Company

Lincoln Zephyr Model V-12 Year 1942 Series V-12

Battery Ford **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 6-8 Volts
Tail and Stop 21-3 C.P., 6-8 Volts **Dash** 3 C.P., 6-8 Volts
Parking Lights

Starter and Generator

Generator **Max. Chg. Rate** **Speed**
Regulation **Cut-in**
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″ to .016″
Spark Plug—Size Champion H10 **Gap** .027″
Firing Order 1-4-9-8-5-2-11-10-3-6-7-12
Timing 4° B.T.C.

Engine **Bore** 2.937″ **Stroke** 3.75″ **Taxable H.P.** 41.4
Piston Ring—Width
Diam. 2.937″ **Gap**
Oiling—Type Pump, Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 10⅔° B.T.C. **Close**
Intake Clearance Hydraulic Adjustment
Exhaust Timing—Open **Close**
Exhaust Clearance Hydraulic Adjustment

Carburetor

Cooling System Centrifugal **Type** 2 Pumps, Belt **Capacity** 27 Qts.

Steering **Camber** ¼″-¾″ **Caster** 3-5° **Toe-in** 1/16″

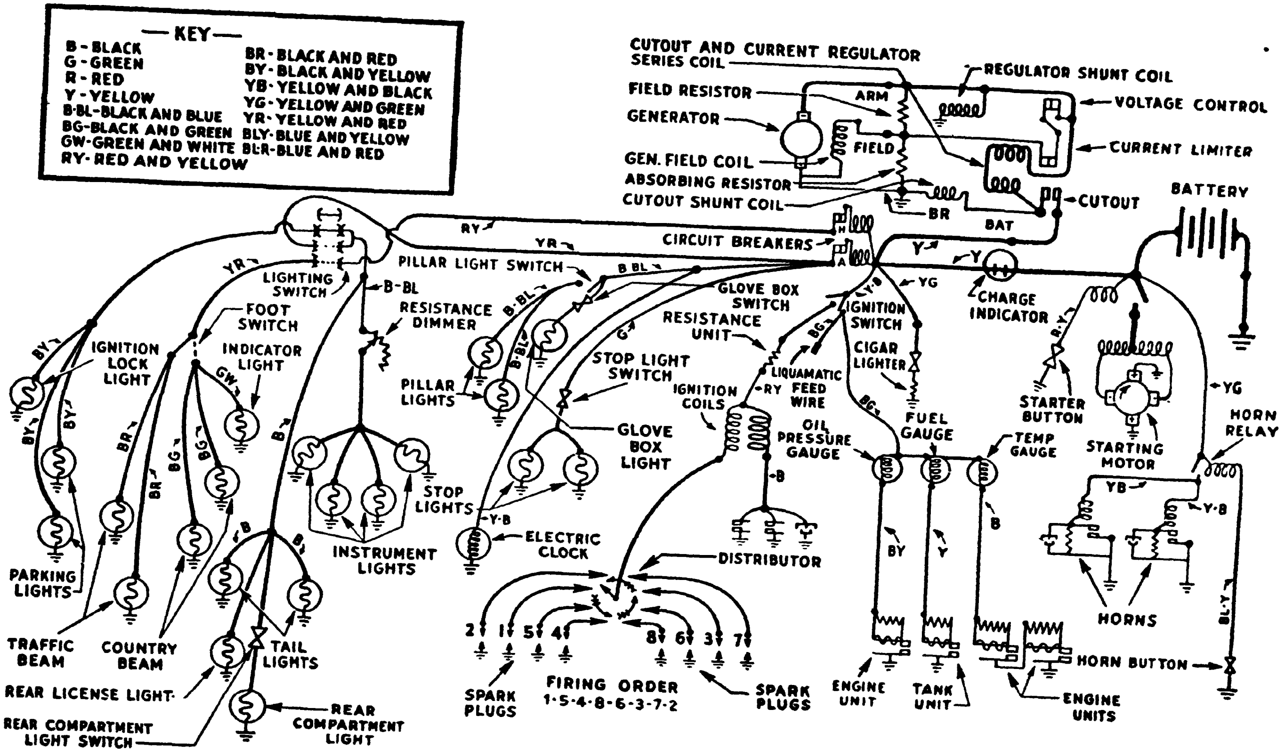
Clutch Centrifugal **Facings**

Gear Ratio **Type** Hypoid

Axle ¾-Floating

Brakes Hydraulic
- **Front** **Clearance Toe** **Heel**
- **Rear** **Clearance Toe** **Heel**
- **Hand** Rear Service

Lining Moulded on Primary
Woven on Secondary **Diagram**



Mercury Wiring Diagram, 1942, Model 8-Cylinder
Courtesy of Ford Motor Company

Mercury **Model** **8-Cylinder** **Year 1942** **Series**

Battery Ford **Type** 17-Plate **Volts** 6 **Amps.** 120

Frame Connection Positive

Lighting **Headlights** Sealed Beam, 6-8 Volts

Tail and Stop 21-3 C.P., 6-8 Volts **Dash** 1½ C.P., 6-8 Volts

Parking Lights

Starter and Generator Own

Generator **Max. Chg. Rate** 32 Amps. **Speed** 1100 R.P.M.

Regulation Volt. and Current **Cut-in**

Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .015″

Spark Plug—Size Champion H-10 **Gap** .025″

Firing Order 1-5-4-8-6-3-7-2

Timing 4° B.T.C.

Engine **Bore** 3.187″ **Stroke** 3.75″ **Taxable H.P.** 32.5

Piston Ring—Width Oil 1—5/32″ Comp. 2—3/32″

Diam. 3.187″ **Gap** .012″ on all

Oiling—Type Gear, Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 44° A.B.C.

Intake Clearance .012″

Exhaust Timing—Open 48° B.B.C. **Close** 6° A.T.C.

Exhaust Clearance .015″

Carburetor Holley AA1-91

Cooling System Centrifugal **Type** 2 Pumps, Belt **Capacity** 22 Qts.

Steering **Camber** ¼°-¾° **Caster** 3°-5° **Toe-in** 1/16″

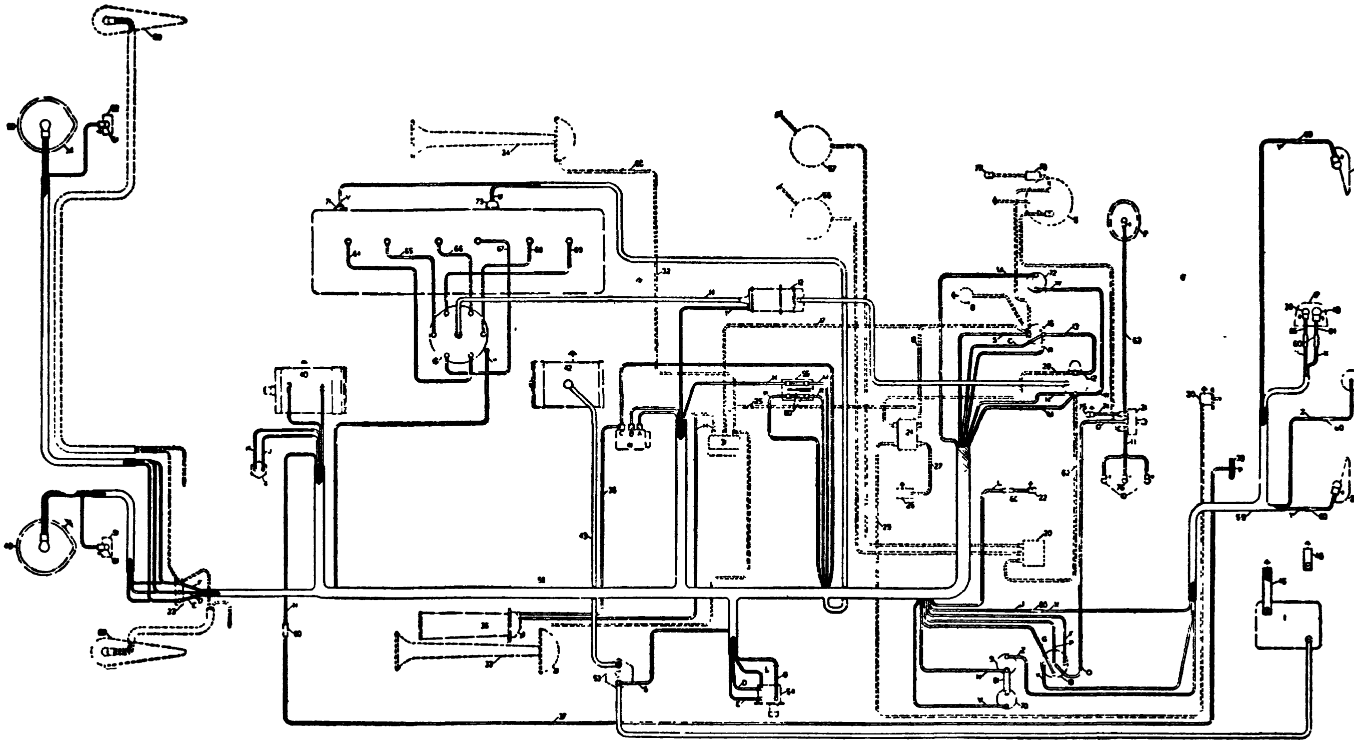
Clutch Centrifugal **Facings**

Gear Ratio 3.5 to 1 **Type** Spiral

Axle ¾-Floating

Brakes Hydraulic
- **Front** 23¼″ x 1¾″ x .20″ **Clearance Toe** **Heel**
- **Rear** 23¼″ x 1¾″ x .20″ **Clearance Toe** **Heel**
- **Hand** Rear Service

Lining Moulded **Diagram**



NASH WIRING DIAGRAM, 1942, MODEL AMBASSADOR 600
Courtesy of Nash Motors

Nash Model Ambassador 600 Year 1942 Series 4240

Battery Auto-Lite **Type** 13-Plate **Volts** 6 **Amps.** 90
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 40-30, 6-8 Volts
Tail and Stop No. 1129 Mazda, Tail No. 63 **Dash** No. 51 Mazda
Parking Lights No. 55 Mazda 6-8 Volts

Starter and Generator Delco-Remy

Generator **Max. Chg. Rate** 35 Amps. **Speed**
Regulation Volt. and Current **Cut-in** 6.2-6.7 Volts
Relay Air Gap .020″ **Contact Gap** .020″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine **Bore** $3\frac{1}{8}$″ **Stroke** $3\frac{3}{4}$″ **Taxable H.P.** 23.44
Piston Ring—Width Oil 1 Comp. 2
Diam. $3\frac{1}{8}$″ **Gap** .010″ to .015″
Oiling—Type Gear, Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 19° B.T.C. **Close** 63° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 59° B.B.C. **Close** 23° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Carter 513S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 14 Qts. less heater

Steering **Camber** 0° to $\frac{1}{2}$° **Caster** 0° **Toe-in** 0″ to $\frac{1}{16}$″

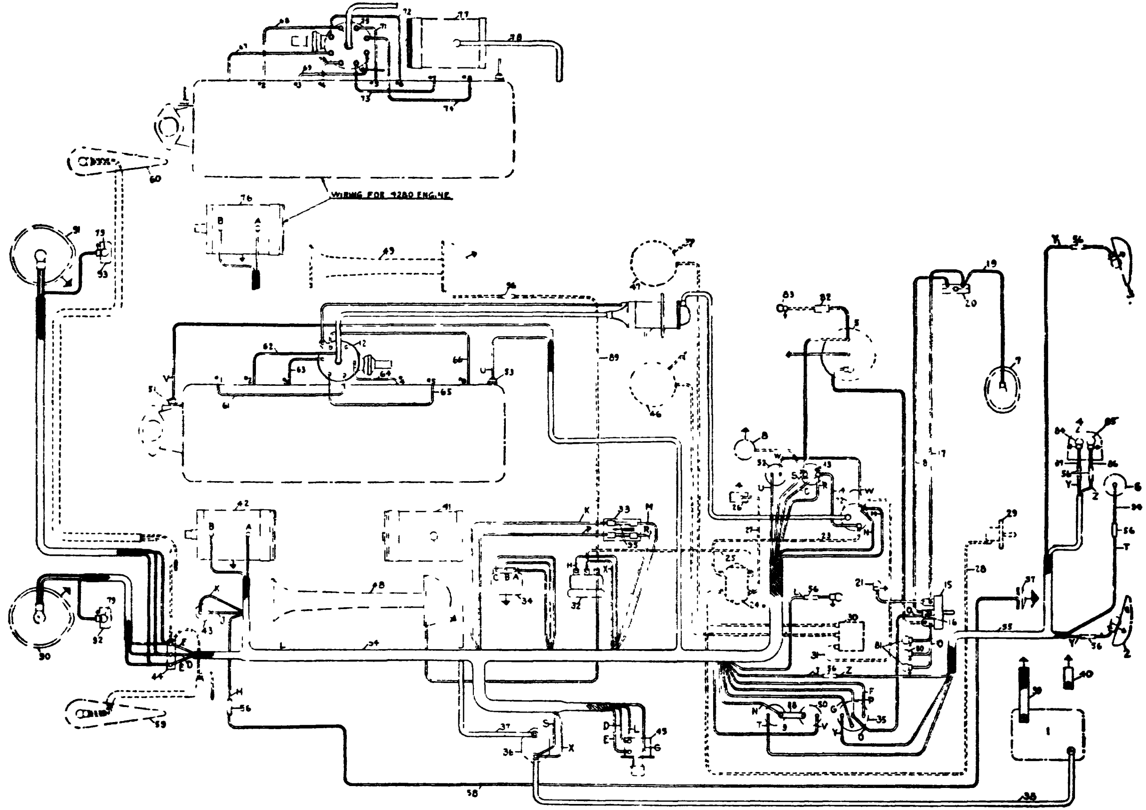
Clutch Borg **Facings** 8″

Gear Ratio 4.1 to 1 **Type** Hypoid

Axle Nash Semifloating

Brakes Bendix Hydraulic
- **Front** Diam. 9″ x $\frac{1}{32}$″ **Clearance Toe** .008″ **Heel** .004″
- **Rear** Diam. 9″ x $\frac{1}{32}$″ **Clearance Toe** .008″ **Heel** .004″
- **Hand** Rear Service

Lining **Diagram**



NASH WIRING DIAGRAM, 1942, MODELS AMBASSADOR 6 AND AMBASSADOR 8
Courtesy of Nash Motors

Nash Model Ambassador 8 **Year 1942 Series 4280**

Battery Auto-Lite **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Headlights** G.E. Sealed Beam, 40-30, 6-8 Volts
Stop No. 1129 Mazda, **Tail** No. 55 Mazda, **Dash** No. 51 Mazda
Parking Lights No. 55 Mazda

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed**
Regulation Volt. and Current **Cut-in** 6.4-6.6 Volts
Relay Air Gap .031″ to .034″ **Contact Gap** .015″

Ignition Auto-Lite **Contact Breaker Gap** .020″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 7° B.T.C.

Engine **Bore** 3⅛″ **Stroke** 4¼″ **Taxable H.P.** 31.25
Piston Ring—Width Oil 2 Comp. 2
Diam. 3⅛″ **Gap** .010″ to .015″
Oiling—Type Gear, Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 10.5° B.T.C. **Close** 63.5° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 69.5° B.B.C. **Close** 35.5° A.T.C.
Exhaust Clearance .015″

Carburetor Carter 538S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 16 Qts. less heater

Steering **Camber** ¼° to ¾° **Caster** 0° to −¼° **Toe-in** 1/32″ to 3/32″

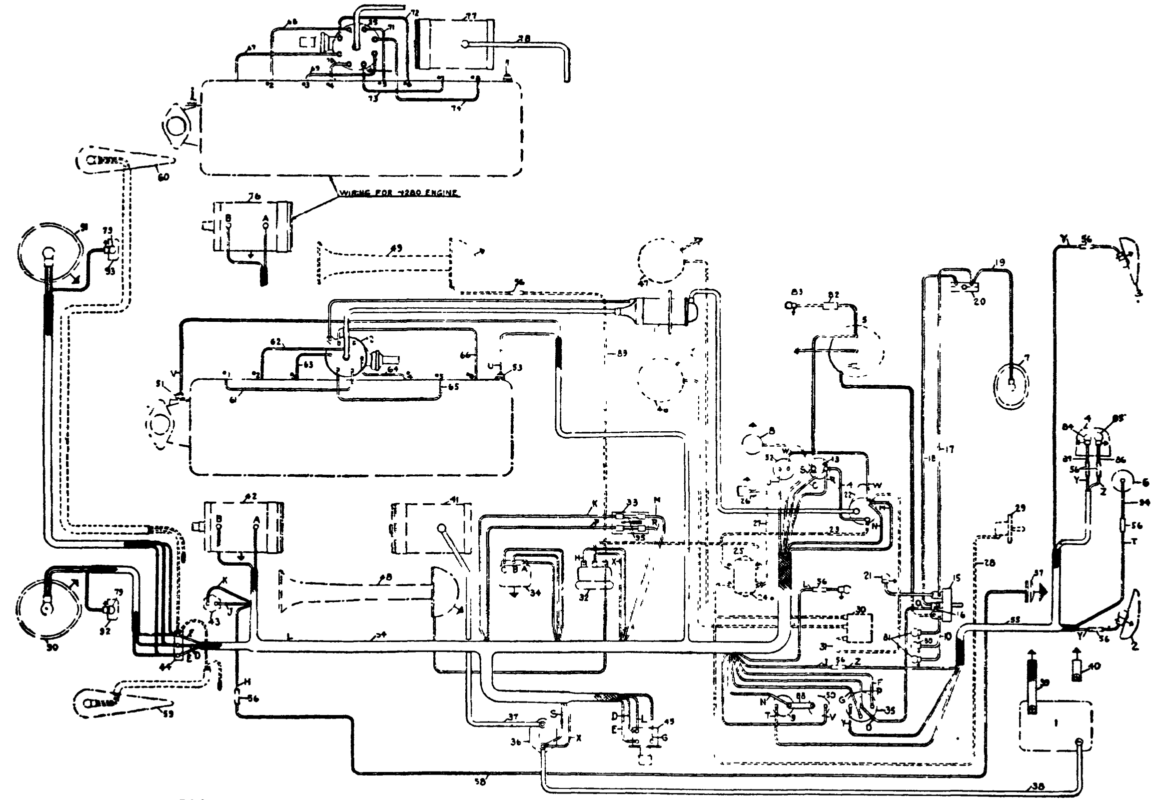
Clutch **Facings** 10″

Gear Ratio 4.1 to 1 **Type** Hypoid

Axle Nash Semifloating

Brakes Bendix Hydraulic
- **Front** Diam. 10″ x 2″ **Clearance** .015″
- **Rear** Diam. 10″ x 2″ **Clearance** .015″
- **Hand** Rear Service

Lining **Diagram**



NASH WIRING DIAGRAM, 1942, MODELS AMBASSADOR 6 AND AMBASSADOR 8
Courtesy of Nash Motors

Nash Model Ambassador 6 — Year 1942 Series 4260

Battery Auto-Lite **Type** 15-Plate **Volts** 6 **Amps.** 105
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 40-30, 6-8 Volts
Stop No. 1129 Mazda, **Tail** No. 55 Mazda, **Dash** No. 51 Mazda
Parking Lights No. 55 Mazda

Starter and Generator Auto-Lite

Generator Auto-Lite
Max. Chg. Rate 35 Amps. **Speed**
Regulation Volt. and Current **Cut-in** 6.4 to 6.6 Volts
Relay Air Gap .031″ to .034″ **Contact Gap** .015

Ignition Auto-Lite
Contact Breaker Gap .020″
Spark Plug—Size 14 MM. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 4° B T.C.

Engine **Bore** 3 3/8″ **Stroke** 4 3/8″ **Taxable H.P.** 27.34
Piston Ring—Width Oil 2 Comp. 2
Diam. 3 3/8″ **Gap** .010″ to .015″
Oiling—Type Gear, Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** 14° B.T.C. **Close** 60° A.B.C.
Intake Clearance .015″ Hot
Exhaust Timing—Open 75° B.B.C. **Close** 31° A.T.C.
Exhaust Clearance .015″ Hot

Carburetor Carter 464S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 17 Qts. less heater

Steering **Camber** 1/4° to 3/4° **Caster** 0° to −1/2° **Toe-in** 1/32″ to 3/32″

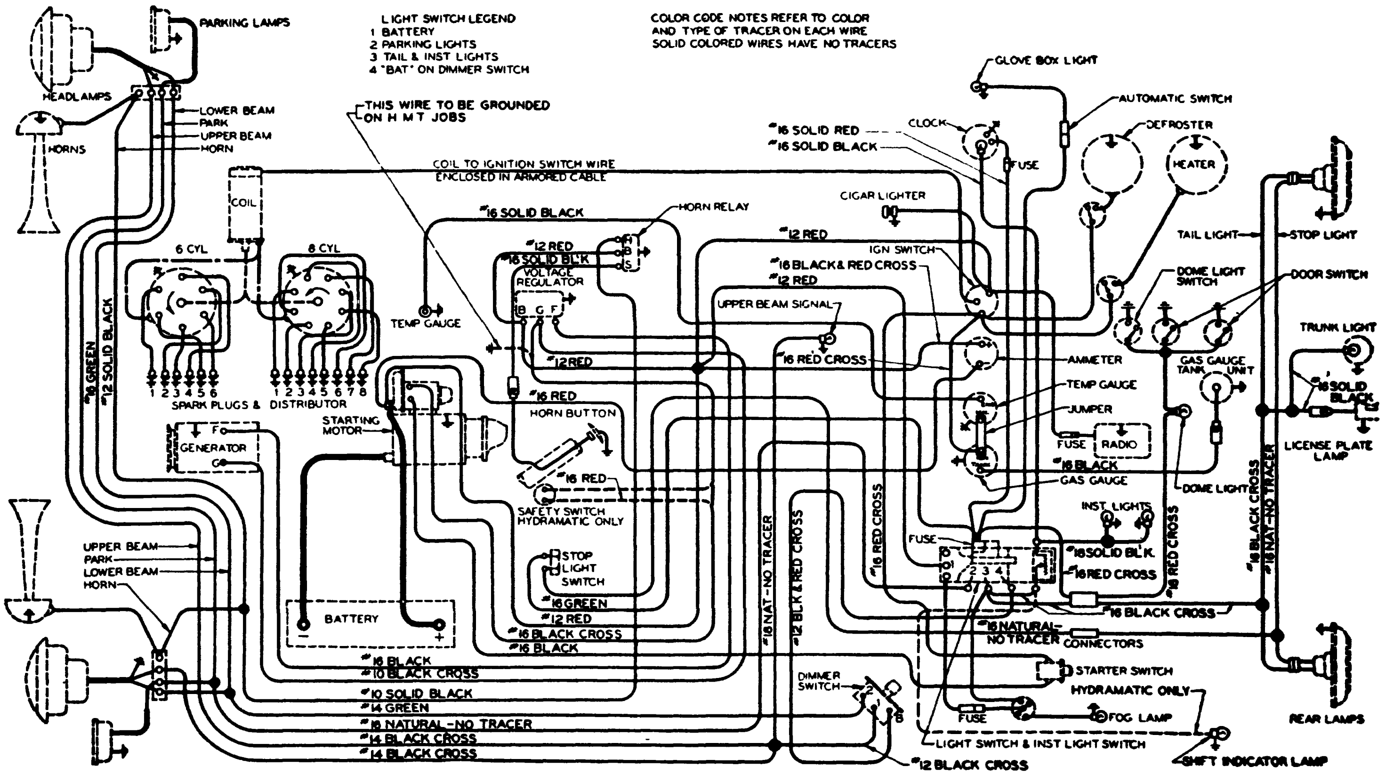
Clutch **Facings** 10″

Gear Ratio 4.1 to 1 **Type** Hypoid

Axle Nash Semifloating

Brakes Bendix Hydraulic
Front Diam. 10″ x 2″ x 3/16″ **Clearance** .015″
Rear Diam. 10″ x 2″ x 3/16″ **Clearance** .015″
Hand

Lining **Diagram**



WIRING DIAGRAM OF OLDSMOBILE CAR WITH SOLENOID STARTER, MODELS 6- AND 8-CYLINDER, 1942

Courtesy of Oldsmobile Division, G.M.S.C.

Oldsmobile Model 6-Cylinder Year 1942 Series B44

Battery Delco **Type** 15-Plate **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Headlights** Sealed Beam, 35-45 Watts, 6-8 Volts
Tail and Stop 3-21 C.P., 6-8 Volts **Dash** 2 C.P., 6-8 Volts
Parking Lights 3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco **Max. Chg. Rate** 33 Amps. **Speed** 2400 R.P.M.
Regulation Volt. and Current **Cut-in** 6.2-6.7 Volts
Relay Air Gap .020″ **Contact Gap** .075″ to .085″

Ignition Remy **Contact Breaker Gap** .020″
Spark Plug—Size AC 44, 14 MM. **Gap** .040″
Firing Order 1-5-3-6-2-4
Timing T.D.C. or by steel ball and indicator

Engine **Bore** 3½″ **Stroke** 4⅛″ **Taxable H.P.** 29.4
Piston Ring—Width Oil 2—.1860″ Comp. 2—.0925″
Diam. 3½″ **Gap** Oil—.007″ Comp.—.008″
Oiling—Type Gear, Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 225° A.T.C.
Intake Clearance .008″
Exhaust Timing—Open 135° A.T.C. **Close** 5° A.T.C.
Exhaust Clearance .011″

Carburetor Carter 481S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18½ Qts.

Steering **Camber** −¼° to +¾° **Caster** 0° to −¾° N. **Toe-in** 1/16″ to ⅛″

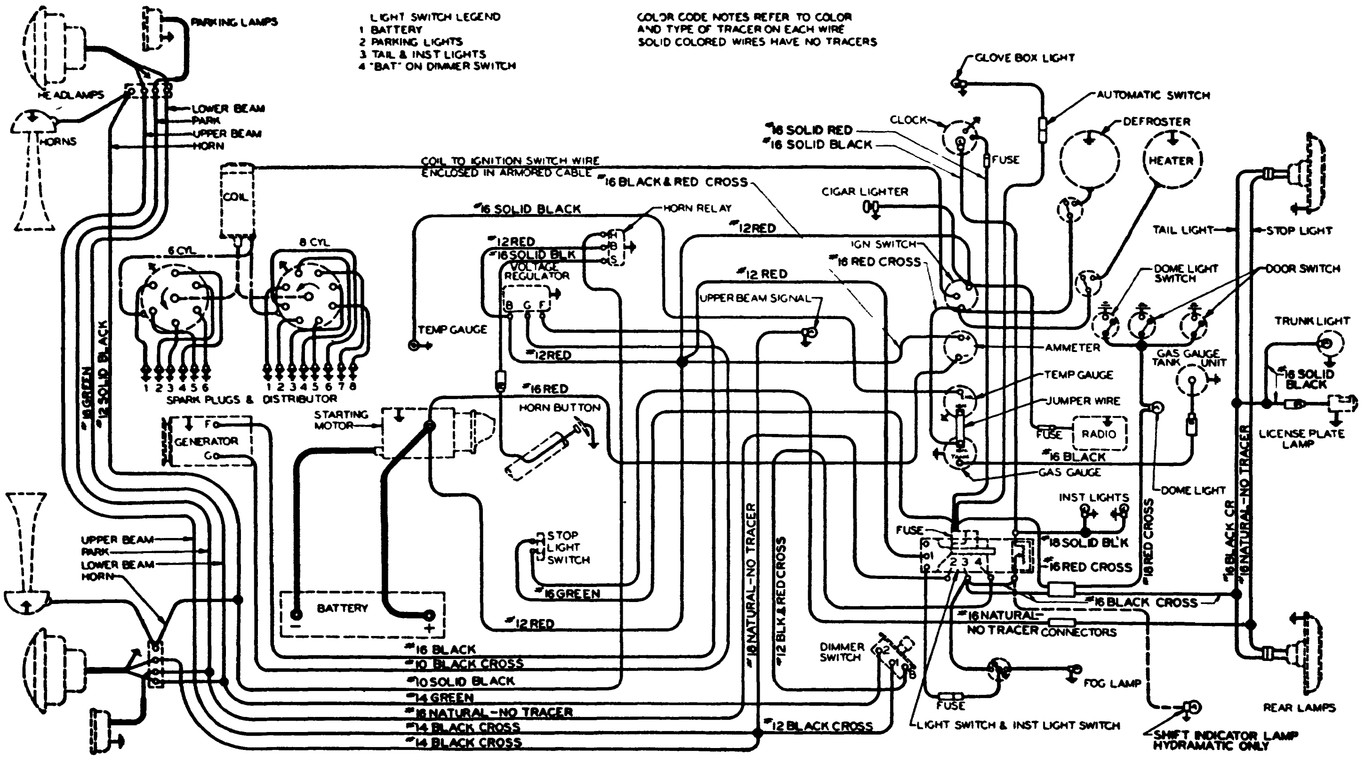
Clutch Borg **Facings** 6″ x 9¼″ x .125″

Gear Ratio Various **Type** Hypoid

Axle Semifloating

Brakes Hydraulic
Front 21 5/16″ x 2″ x 3/16″ **Clearance** .015″
Rear 21 5/16″ x 1¾″ x 3/16″ **Clearance** .015″
Hand Rear Service

Lining Moulded **Diagram**
Wheel bases 119″ and 125″



WIRING DIAGRAM OF OLDSMOBILE CAR WITH MANUAL STARTER, MODELS 6- AND 8-CYLINDER, 1942

Courtesy of Oldsmobile Division, G.M.S.C.

Oldsmobile Model 8-Cylinder **Year 1942 Series B44**

Battery Delco **Type** 17-Plate **Volts** 6 **Amps.** 120
Frame Connection Negative

Lighting **Headlights** 35-45 Watts, 6-8 Volts
Tail and Stop 3-21 C.P., 6-8 Volts **Dash** 2 C.P., 6-8 Volts
Parking Lights 3 C.P., 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco **Max. Chg. Rate** 33 Amps. **Speed** 2400 R.P.M.
Regulation Volt. and Current **Cut-in** 6.2-6.7 Volts
Relay Air Gap. 020″ **Contact Gap** .075″ to .085″

Ignition Remy **Contact Breaker Gap** .0125″ to .0175″
Spark Plug—Size AC 44.14 MM. **Gap** .030″
Firing Order 1-6-2-5-8-3-7-4
Timing 2° B.T.C. or by steel ball and indicator

Engine **Bore** 3¼″ **Stroke** 3⅞″ **Taxable H.P.** 33.8
Piston Ring—Width Oil 2—.1860″ Comp. 2—.0925″
Diam. 3¼″ **Gap** Oil—.009″ Comp.—.009″
Oiling—Type Gear, Pump **Capacity** 6 Qts.

Valves **Intake Timing—Open** T.D.C. **Close** 225° A.T.C.
Intake Clearance .008″
Exhaust Timing—Open 135° A.T.C. **Close** 10° A.T.C.
Exhaust Clearance .011″

Carburetor Carter 503S—480S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 20½ Qts.

Steering **Camber** −¼° to +¾° **Caster** 0° to −¾° **Toe-in** 1/16″ to ⅛″

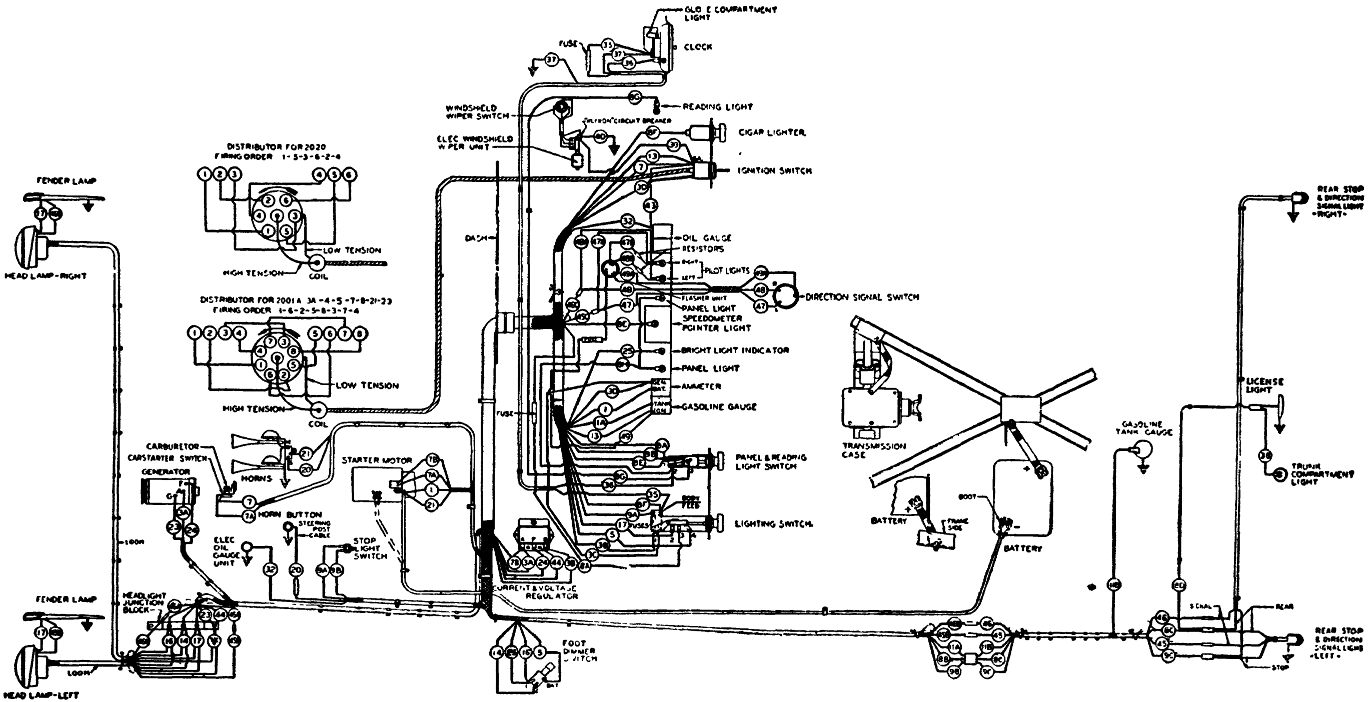
Clutch Borg **Facings** 7″ x 10″ x .125″

Gear Ratio Various **Type** Hypoid

Axle Semifloating

Brakes Hydraulic
- **Front** 21 5/16″ x 2¼″ x 3/16″ **Clearance** .015″
- **Rear** 21 5/16″ x 2″ x 3/16″ **Clearance** .015″
- **Hand** Rear Service

Lining Moulded **Diagram**
Wheel base 127″



PACKARD WIRING DIAGRAM, 1942, MODEL 6-CYLINDER, SERIES 2000-2020

Courtesy of Packard Motor Car Company

Packard Model 6-Cylinder Year 1942 Series 2000-2020

Battery Various **Type** 15-Plate **Volts** 6 **Amps.** 100-2000
Frame Connection Positive 93-2020

Lighting **Headlights** Sealed Beam 40-30 Watts, 6-8 Volts
Dash, Tail and Stop
Parking Lights

Starter and Generator Auto-Lite and Delco

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed**
Delco **Regulation** Volt. and Current **Cut-in** 6.5 to 7 Volts
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .018″-.022″
Spark Plug—Size 10 MM. **Gap** .025″-.030″
Firing Order 1-5-3-6-2-4
Timing 4° B.T.C.

Engine **Bore** 3½″ **Stroke** 4¼″ **Taxable H.P.** 29.4
Piston Ring—Width Oil 1—.1865″ Comp. 2—No. 1—.093″, No. 2—.124″
Diam. 3½″ **Gap** Oil .007″-.015″ Comp. .007″-.017″
Oiling—Type Gear, Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 39° A.B.C.
Intake Clearance .007″ Warm
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .010″ Warm

Carburetor Carter

Cooling System Centrifugal **Type** Pump, Belt **Capacity**
3½ Gals. 2000
3¾ Gals. 2020.

Steering **Camber** RH 0°+¾°−¼°, LH −0°+1° **Caster** ¼°±½° **Toe-in** +⅛-0

Clutch **Facings** Woven, 6″ x 9½″ x .125″

Gear Ratio 4.3 to 1 **Type** Hypoid

Axle Packard Semifloating

Brakes Hydraulic
- **Front** 24½″ x 1¾″ x 3/16″ **Clearance** .015″
- **Rear** 22⅝″ x 1¾″ x 3/16″ **Clearance** .015″
- **Hand** Rear Service

Lining **Diagram**
Rear 2001-2021 24½″ x 1¾″ x 3/16″

Packard Model 8-Cylinder Year 1942 Series 2001-2021

Battery Various **Type** 15-Plate 2001, 17-Plate 2021 **Volts** 6 **Amps.** 100-2001, 114-2021

Frame Connection Positive

Lighting **Headlights** Sealed Beam 40-30 Watts, 6-8 Volts

Dash, Tail and Stop

Parking Lights

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 **Speed**

Regulation Volt. and Current **Cut-in** 920 R.P.M. 6½-7 Volts

Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .0125″-.0175″

Spark Plug—Size 10 MM. **Gap** .0255″-.0305″

Firing Order 1-6-2-5-8-3-7-4

Timing 5° B.T.C.

Engine **Bore** 3¼″ **Stroke** 4¼″ **Taxable H.P.** 33.8

Piston Ring—Width Oil 1—.1865″ Comp. 2— No. 1—.092″-.093″, No. 2—.124″-.1235″

Diam. 3¼″ **Gap** Oil .007″-.015″, Comp. .007″-.017″

Oiling—Type Gear, Pump **Capacity** 5½ Qts.

Valves **Intake Timing—Open** 1° B.T.C. **Close** 39° A.B.C.

Intake Clearance .007″ Warm

Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.

Exhaust Clearance .010″ Warm

Carburetor Carter

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 4¼ Gals.

Steering **Camber** RH−0°+¾°−¼°, LH−0°+1°−0° **Caster** ¼°±½° **Toe-in** 0″+⅛″−0″

Clutch **Facings** Woven, 6″ x 10″ x .125″

Gear Ratio 4.1-2001, 4.09-2021 **Type** Hypoid

Axle Packard Semifloating

Brakes Hydraulic
- **Front** 24½″ x 1¾″ x 3/16″ **Clearance** .015″
- **Rear** 24½″ x 1¾″ x 3/16″ **Clearance** .015″
- **Hand** Rear Service

Lining **Diagram**

Packard Model 8-Cylinder Year 1942 Series 2003-2023-2004-5-6-7-8

Battery Various **Type** 17-Plate **Volts** 6 **Amps.** 120-2003-6
114-2023-2004-5-7-8
Frame Connection Positive

Lighting **Headlights** Sealed Beam 40-30 Watts, 6-8 Volts
Dash, Tail and Stop
Parking Lights

Starter and Generator

Generator **Max. Chg. Rate** 35 Amps. **Speed**
Regulation Volt. and Current **Cut-in** 780 R.P.M. 6½-7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .0125″-.0175″
Spark Plug—Size 10 MM. **Gap** .0125″-.0175″
Firing Order 1-6-2-5-8-3-7-4
Timing 4° B.T.C.

Engine **Bore** 3½″ **Stroke** 4⅝″ **Taxable H.P.** 39.2
Piston Ring—Width Oil 1—.1865″, Comp. 2— No. 1—.093″-.0935″,
No. 2—.124″-.1235″
Diam. 3½″ **Gap** Oil .007″-.015″, Comp.
.017″-.017″
Oiling—Type Gear, Pump **Capacity** 7 Qts.

Valves **Intake Timing—Open** 4° B.T.C. **Close** 51° A.B.C.
Intake Clearance Hydraulic Adjustment
Exhaust Timing—Open 49° B.B.C. **Close** 10° A.T.C.
Exhaust Clearance Hydraulic Adjustment

Carburetor Carter

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 5 Gals.

Steering **Camber** **Caster** Neg. 1° 15′ ± ½° **Toe-in**
RH −0° + ¾° − ¼° 0″ + ⅛″ − 0″
LH −0° + 1° − 0°

Clutch **Facings** Woven, 6⅝″ x 11″ x .125″

Gear Ratio 3.92-2003-6-2023, **Type** Hypoid
4.09-2004-7, 4.36-2005-8

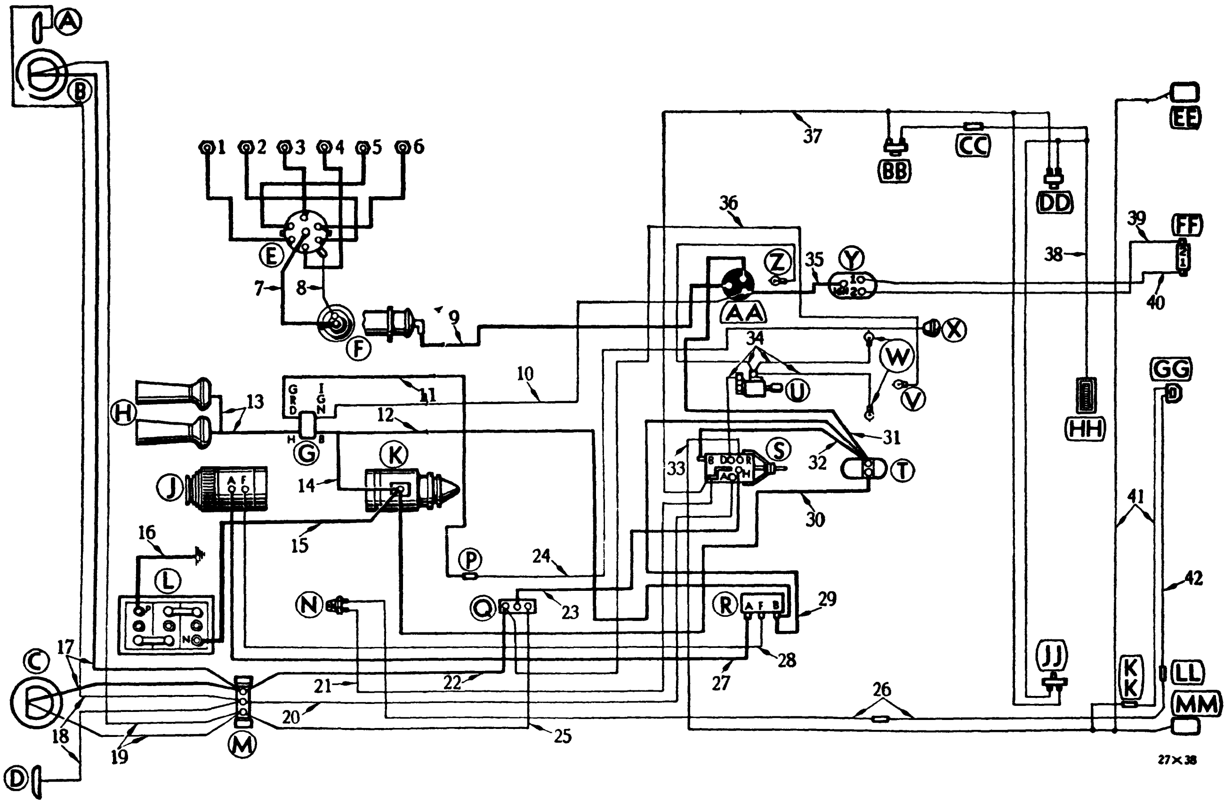
Axle Packard Semifloating

Brakes Hydraulic
- **Front** 24½″ x 2″ x 3/16″ **Clearance** .015″
- **Rear** 24½″ x 2″ x 3/16″ **Clearance** .015″
- **Hand** Rear Service

Lining **Diagram**

2003-2006
- **Front** 24½″ x 2¼″ x 3/16″
- **Rear** 24½″ x 2″ x 3/16″

2004-5-7-8
- **Front**, **Rear** 26″ x 2¼″ x 3/16″



PLYMOUTH WIRING DIAGRAM, 1942, MODEL 6-CYLINDER

Courtesy of Plymouth Division, Chrysler Sales Corporation

Plymouth Model 6-Cylinder Year 1942 Series P14S, P14C

Battery **Type** 45-Plates **Volts** 6 **Amps.** 95

Frame Connection Positive

Lighting **Headlights** Sealed Beam, 45-35 Watts, 6-8 Volts

Tail and Stop 3-21 C.P., 6-8 Volts **Dash** 6 C.P., 6-8 Volts

Parking Lights 3 C.P., 6-8 Volts

Starter and Generator

Generator **Max. Chg. Rate** 35 Amps. **Speed** 2100 to 2400 R.P.M. Hot

Regulation Volt. and Current **Cut-in** 6.4 Volts

Relay Air Gap .031″ to .034″ **Contact Gap** .015″

Ignition **Contact Breaker Gap** .020″

Spark Plug—Size 14 MM. **Gap** .025″

Firing Order 1-5-3-6-2-4

Timing T.D.C.

Engine **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35

Piston Ring—Width Oil 2—5/32″ Comp. 2—3/32″

Diam. 3¼″ **Gap** .007″-.015″

Oiling—Type Gear, Pump **Capacity** 5 Qts.

Valves **Intake Timing—Open** 12° B.T.C. **Close**

Intake Clearance .008″ Hot

Exhaust Timing—Open **Close** 6° A.T.C.

Exhaust Clearance .010″ Hot

Carburetor

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 15 Qts.

Steering **Camber** +¼° **Caster** −1° to +1° **Toe-in** 0″ to 1/16″

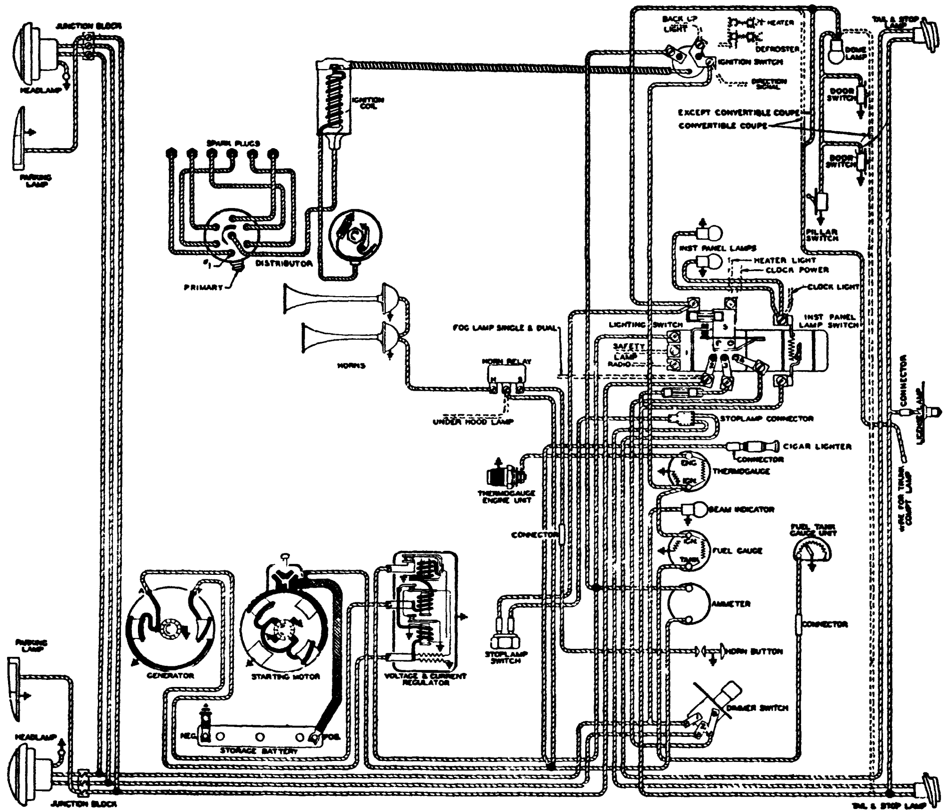
Clutch **Facings** 9¼″ x 6″ x .125″

Gear Ratio 3.9 to 1 **Type** Hypoid

Axle Semifloating

Brakes Hydraulic
- **Front** 18″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Rear** 18″ x 2″ x 13/64″ **Clearance Toe** .012″ **Heel** .006″
- **Hand** 16 11/16″ x 2″ x 5/32″ Transmission **Clearance** .015″-.020″

Lining **Diagram**



LIGHTING SWITCH
1-RED TR.
2-NATURAL
3 BLACK CR. TR.
4-BLACK & RED CR. TR.
5-FUSED-GREEN TR
RED CR TR.

IGNITION SWITCH
BAT-RED TR.
GAS GA.-RED CR. TR.

INST. PANEL LAMP SWITCH
INST PANEL LAMPS
BLACK CR. TR.

THERMOGAUGE
IGN-RED CR. TR-RED CR. TR
ENG-BLACK

THERMOGAUGE ENGINE UNIT
BLACK

BEAM INDICATOR
BLACK CR. TR.

FUEL GAUGE
IGN RED CR. TR
TANK-BLACK TR.

AMMETER
RED TR.
BLACK & RED CR. TR

VOLTAGE & CURRENT REGULATOR
B BLACK & RED CR TR.
G-BLACK CR. TR.
F-BLACK TR

GENERATOR
A BLACK CR TR.
F BLACK TR.

STOPLAMP SWITCH
GREEN TR (HOT)
NATURAL

DIMMER SWITCH
1-BLACK CR TR
2-GREEN TR
B BLACK & RED CR. TR.

HEADLAMPS
UPPER BEAM-BLACK CR TR
LOWER BEAM-GREEN TR

PARKING LAMPS
NATURAL

TAIL & STOP LAMPS
TAIL-BLACK CR. TR.
R.H. STOP-GREEN CR. TR.
L.H. STOP-BLACK & GREEN CR. TR.

CIGAR LIGHTER
RED CR TR

PONTIAC WIRING DIAGRAM, 1942, MODEL 6-CYLINDER
Courtesy of Pontiac Division, G.M.S.C.

Pontiac Model 6-Cylinder **Year 1942 Series**

Battery Delco **Type** 15-Plate 15E2-W **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Headlights** Sealed Beam, 6-8 Volts
Tail and Stop No. 1154 **Dash** No. 63, 6-8 Volts
Parking Lights No. 63, 6-8 Volts

Starter and Generator Delco-Remy

Generator Delco **Max. Chg. Rate** 30 Amps. Cold **Speed** 1700 R.P.M.
Regulation Volt. and Current **Cut-in** 6.2 to 6.7 Volts
Relay Air Gap .020″ **Contact Gap** Regulator .070″-.075″

Ignition Remy **Contact Breaker Gap** .020″
Spark Plug—Size AC Type 45 **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing 4° B.T.C.

Engine **Bore** 3$\frac{9}{16}$″ **Stroke** 4″ **Taxable H.P.** 30.4
Piston Ring—Width Oil 1 Comp. 2
Diam. 3$\frac{9}{16}$″ **Gap** Oil .009″-.014″ Comp. .007″-.012″
Oiling—Type Pump, Gear **Capacity** Dry 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .011″ Go, .013″ No Go
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .011″ Go, .013″ No Go

Carburetor Carter 494S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** 18 Qts.

Steering **Camber** +¼° to −¼° **Caster** −½° to −1° **Toe-in** 0″ to $\frac{1}{16}$″

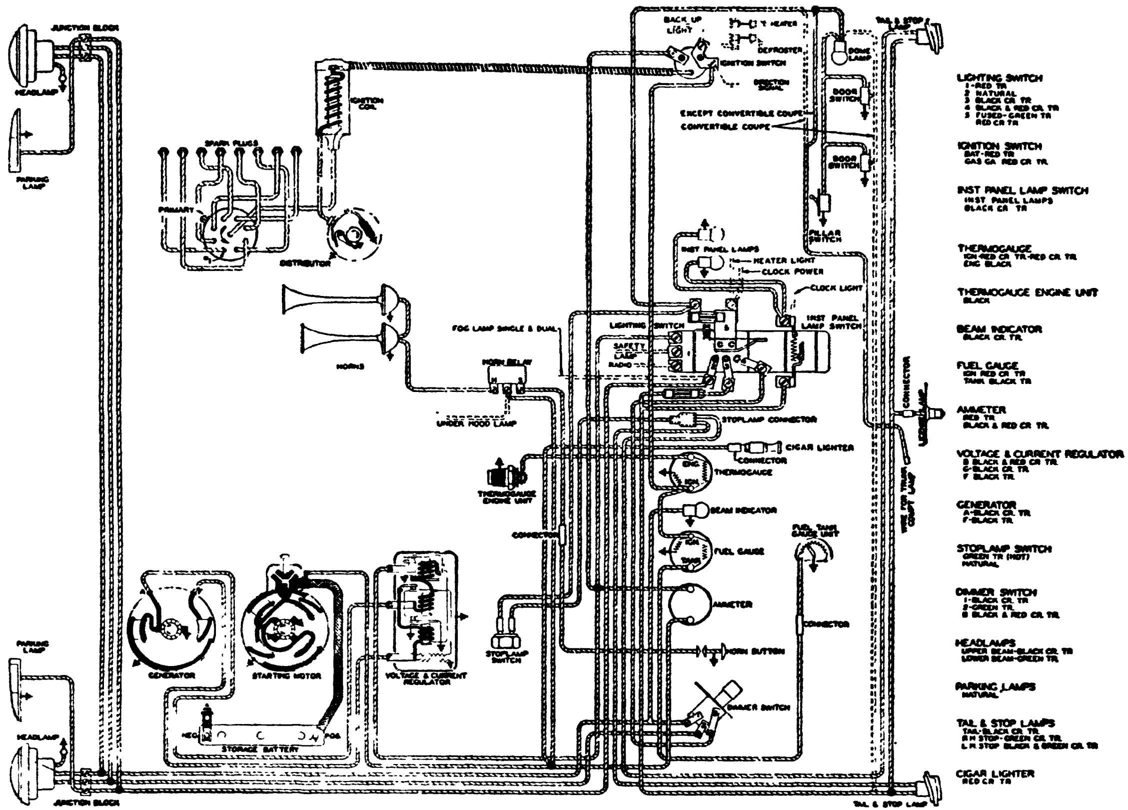
Clutch **Facings** 9⅛″ x 6″ x ⅛″

Gear Ratio Various **Type** Hypoid

Axle Semifloating

Brakes Hydraulic
- **Front** 21$\frac{5}{16}$ x 2″ x $\frac{3}{16}$″ **Clearance** .010″
- **Rear** 21$\frac{5}{16}$″ x 1¾″ x $\frac{3}{16}$″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded **Diagram**



PONTIAC WIRING DIAGRAM, 1942, MODEL 8-CYLINDER
Courtesy of Pontiac Division, G.M.S.C.

Pontiac Model 8-Cylinder Year 1942 Series

Battery Delco **Type** 15-Plate 15E2-W **Volts** 6 **Amps.** 100
Frame Connection Negative

Lighting **Headlights** Sealed Beam
Tail and Stop No. 1154 **Dash** No. 63, 6-8 Volts
Parking Lights No. 63

Starter and Generator Delco-Remy

Generator Delco **Max. Chg. Rate** 30 Amps. **Speed** 1700 R.P.M.
Regulation Volt. and Current **Cut-in** 6.2 to 6.7 Volts
Relay Air Gap .020″ **Contact Gap** Regulator .070″-.075″

Ignition Remy **Contact Breaker Gap** .015″
Spark Plug—Size A.C. Type 45 **Gap** .025″
Firing Order 1-6-2-5-8-3-7-4
Timing 4° B.T.C.

Engine **Bore** $3\frac{1}{4}$″ **Stroke** $3\frac{3}{4}$″ **Taxable H.P.** 33.8
Piston Ring—Width Oil 1 Comp. 2
Diam. $3\frac{1}{4}$″ **Gap** Oil .009″-.014″, Comp. 007″-.012″
Oiling—Type Pump, Gear **Capacity** Dry 6 Qts.

Valves **Intake Timing—Open** 5° B.T.C. **Close** 39° A.B.C.
Intake Clearance .011″ Go, .013″ No Go
Exhaust Timing—Open 45° B.B.C. **Close** 5° A.T.C.
Exhaust Clearance .011″ Go, .013″ No Go

Carburetor Carter 540S

Cooling System Centrifugal **Type** Pump, Belt **Capacity** $19\frac{1}{2}$ Qts.

Steering **Camber** $+\frac{1}{4}°$ to $-\frac{1}{4}°$ **Caster** $-\frac{1}{2}°$ to $-1°$ **Toe-in** 0″ to $\frac{1}{16}$″

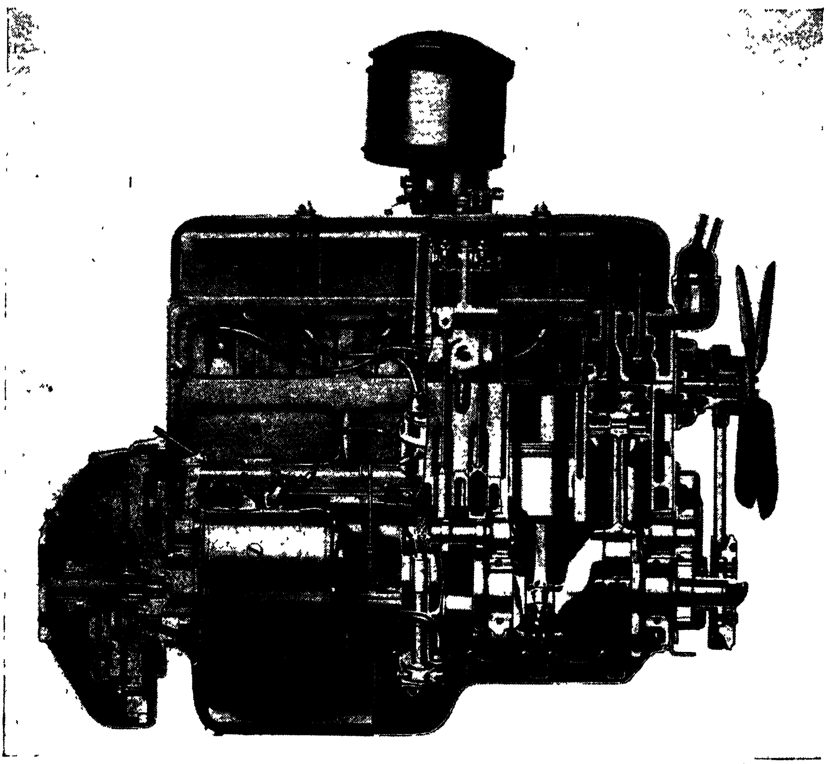
Clutch **Facings** $9\frac{1}{2}$″ x 6″ x $\frac{1}{8}$″

Gear Ratio Various **Type** Hypoid

Axle Semifloating

Brakes Hydraulic
- **Front** $21\frac{5}{16}$″ x 2″ x $\frac{3}{16}$″ **Clearance** .010″
- **Rear** $21\frac{5}{16}$″ x $1\frac{3}{4}$″ x $\frac{3}{16}$″ **Clearance** .010″
- **Hand** Rear Service

Lining Moulded **Diagram**



SECTIONAL VIEW OF 1946 CHEVROLET ENGINE
Courtesy of Chevrolet Motor Division, G.M.C.

Index
Wiring Diagrams
and
Data Sheets
1943, 1946 Cars

WIRING DIAGRAMS AND DATA SHEETS

CHART OF ABBREVIATIONS

GENERAL

Amps.—Amperes
V.—Volts
C.P.—Candle Power
R.& L. of Firing Order—Right and left determined from driver's seat
Max. Chg. Rate—Maximum Charging Rate
R.P.M.—Revolutions per Minute
M.P.H.—Miles per Hour
D.C.—Double Contact
MM.—Millimeters
Side Lights—Side or Parking Lights
Air Gap—Contacts Closed
Oil—Oil Ring
Comp.—Compression Ring

IGNITION AND VALVE TIMING

B.T.D.C. or B.T.C.—Before Top Dead Center
B.B.D.C. or B.B.C.—Before Bottom Dead Center
A.B.D.C. or A.B.C.—After Bottom Dead Center
A.T.D.C. or A.T.C.—After Top Dead Center
T.D.C. at Retard—Top Dead Center; Spark Control Retarded
12° past T.D.C.—Piston 12° past T.D.C. Spark Control Retarded
2½" before T.D.C.—Piston 2½", on Flywheel, before T.D.C.
"Ret" at Retard—Marks "Ret" on Flywheel

LUBRICATION SYSTEM

Gals.—Gallons
Qts.—Quarts
Press.—Pressure to Main Bearings
Splash—Pressure Circulating Splash
Splash—Connecting Rod Dips

REAR AXLE

Semi—Semi-Floating
¾ Flt.—Three-quarters Floating
Full Flt.—Full Floating

CLUTCH

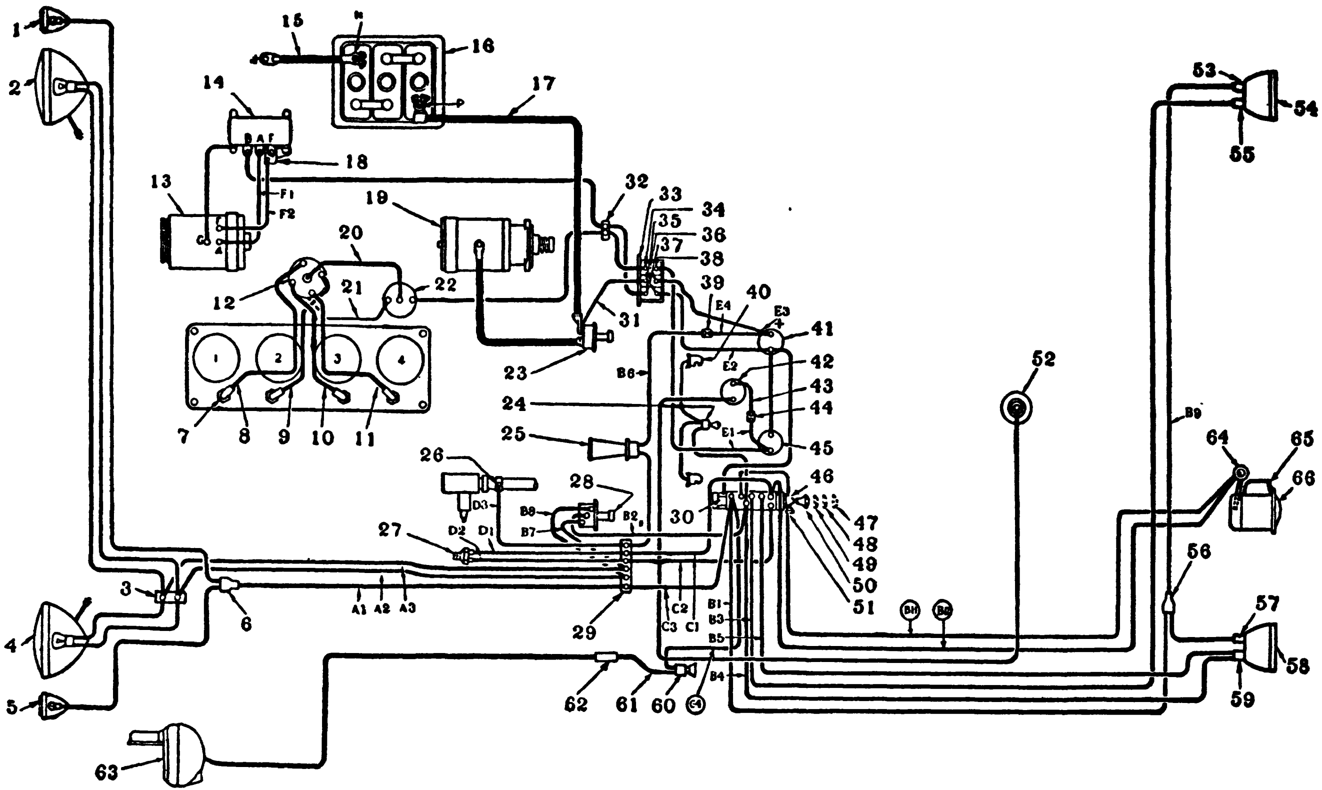
Disc.—Multiple disc, either wet or dry
Plate—Single or Double Plate Type

BRAKES

Front—Front Wheels
Rear—Rear Wheels
Hand—Hand Brake
Trans.—Transmission Brake

INDEX

1943, 1946 Wiring Diagrams and Data Sheets



WILLYS-OVERLAND WIRING DIAGRAM, 1943, MODEL MB QUARTER-TON JEEP
Courtesy of Willys-Overland, Incorporated

Willys Overland Model ¼-Ton Jeep MB Year 1943 Series

Battery Auto-Lite or Willard **Type** TS-2-15 / SW-2-119 — 15 Plates **Volts** 6 **Amps.** 116
Frame Connection Negative

Lighting **Headlights** Sealed Beam, 6-8 Volts—45 C.P., Double Contact
Tail and Stop 3-21 CP., 6-8 Volts
Dash 3 CP., 6-8 Volts
Parking Lights

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 40 Amps. **Speed** 1465 Max. R.P.M.
Regulation Voltage Reg. **Cut-in.** 6.4-6.6 Volts
Relay Air Gap .0595″-.0625″ **Contact Gap** .015″

Ignition **Contact Breaker Gap** .020″
Spark Plug—Size QM-2, 14 M.M. **Gap** .030″
Firing Order 1-3-4-2
Timing 5° B.T.D.C. 72 Octane, T.D.C. 68 Octane

Engine L-Head **Bore** 3⅛″ **Stroke** 4⅜″ **Taxable H.P.** 15.63
Piston Ring—Width Oil 1—3/16″, Comp. 2—3/32″
Diam. 3⅛″ **Gap** .008″-.013″
Oiling—Type Planetary Gear **Capacity** 4 Qts.

Valves **Intake Timing—Open** 9° B.T.D.C. **Close** 50° A.B.D.C.
Intake Clearance .014″ Hot or Cold
Exhaust Timing—Open 47° B.B.D.C. **Close** 12° A.T.D.C.
Exhaust Clearance .014″ Hot or Cold

Carburetor Carter WO-539S

Cooling System Centrifugal **Type** Belt Drive **Capacity** 11 Qts.

Steering **Camber** 1½° **Caster** 3° **Toe-in** 3/64″-3/32″

Clutch Dry **Facings** Single Plate, Borg and Beck 5⅛″ x 7⅞″ x ⅛″

Gear Ratio 4.88 to 1 **Type** Hypoid

Axle Full floating, Front and Rear

Brakes Hydraulic 4-wheel
Forward Shoe 10 7/32″ x 1¾″ x 3/16″ **Clearance Toe Heel**
Reverse Shoe 6 39/64 x 1¾″ x 3/16″ **Clearance Toe Heel**
Hand Mechanical 18 9/16″ x 2″ x 5/32″
Lining Woven **Diagram**

Ford Model 1946 69A Year 1946 Series

Battery **Type** 17 plates per cell **Volts** 6 **Amps.**
Frame Connection Positive

Lighting Headlights Sealed Beam 30-40 Watts
Tail and Stop 3-21 CP., 6-8 Volts **Dash** 1½ CP., 6-8 Volts
Parking Lights 3 CP., 6-8 Volts

Starter and Generator

Generator **Max. Chg. Rate** 30 Amps. **Speed**
Regulation Voltage Reg. **Cut-in** 6.1 to 6.3 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″ to .016″
Spark Plug—Size **Gap**
Firing Order 1-5-4-8-6-3-7-2
Timing 4° B.T.D.C.

Engine 90° V8 **Bore** 3.187″ **Stroke** 3.75″ **Taxable H.P.** 32.5
Piston Ring—Width
Diam. **Gap**
Oiling—Type **Capacity** 5 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .010″ to .012″
Exhaust Timing—Open **Close**
Exhaust Clearance .014″ to .016″

Carburetor Dual Down-draft

Cooling System Centrifugal **Type** Belt Drive **Capacity** 22 Qts.

Steering **Camber** **Caster** **Toe-in**

Clutch Dry **Facings** Single Plate

Gear Ratio 3.54 to 1 **Type**

Axle ¾ Floating

Brakes All Shoes
Hydraulic **Hand** Mechanical Rear Wheels **Diagram**
Lining Forward Shoe 13.12″ x 1.705″ to 1.735″ x 1.95″ to .205″
Reverse Shoe 10.08″ x 1.705″ to 1.735″ x .195″ to .205″

Hudson **Model 53-54, 8-Cylinder** **Year 1946** **Series**

Battery National **Type**—57-Plate **Volts** 6-8 **Amps.**
Frame Connection Positive

Lighting Headlights Sealed Beam 30-40 Watts
Tail and Stop Mazda 1154, 21-3 CP., 6-8 Volts **Dash** 2 CP., 6-8 Volts
Parking Lights With Indicator 21-3 CP., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 38 Amps. Hot **Speed** 35 M.P.H.
Regulation 3d Brush and Voltage Reg
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap** .017″
Spark Plug —**Size** 14 M.M. **Gap.** .032″
Firing Order 1-6-2-5-8-3-7-4
Timing T.D.C.

Engine 8 Cyl. **Bore** 3″ **Stroke** 4½″ **Taxable H.P.** 28.8
Piston Ring—Width Oil—2, $\frac{3}{16}$″, $\frac{5}{32}$″, Comp. 2—$\frac{3}{32}$″
Diam. 3″ **Gap**
Oiling—Type Duo-Flo Plunger **Capacity** Dry 9 Qts., Refill 7 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .010″ Hot
Exhaust Timing—Open **Close**
Exhaust Clearance .012″ Hot

Carburetor Carter 1¼″ Duplex Down-draft

Cooling System Cent. Pump **Type** Belt Drive **Capacity** 18 Qts.

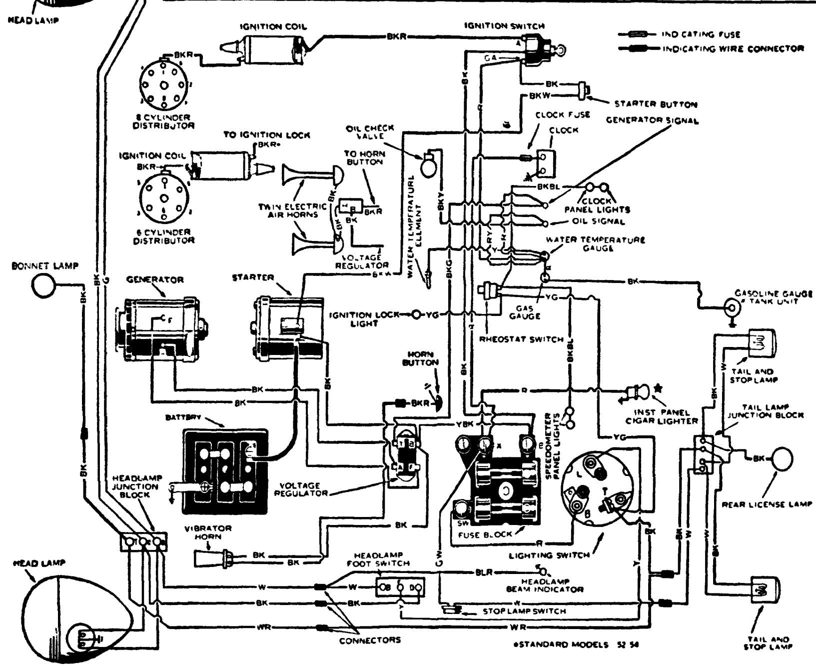
Steering **Camber** ¼° to ¾° **Caster** ¼° to +¼° **Toe-in** 0 to $\frac{1}{16}$″

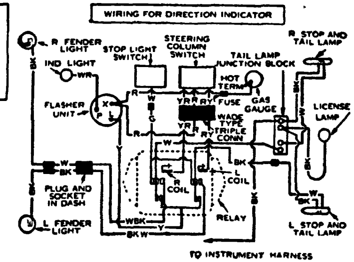
Clutch Wet **Facings** Fluid, Cork Insert—10″

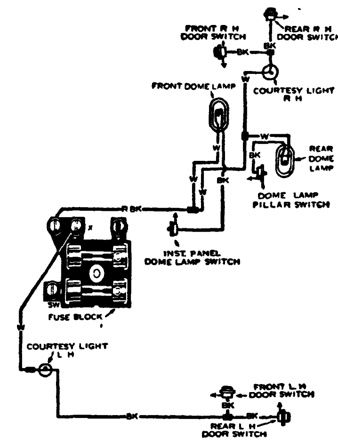
Gear Ratio Various **Type** Helical Bevel

Axle Semi-Floating

Brakes Bendix Hydraulic
Front All Shoes
Rear, **Hand** } 11″ Diam.
Lining 1¾″ Wide
Lining Clearance } .0075″
Mechanical Follow-Up 1¼″
Diagram







CODE	COLOR	CODE	COLOR	CODE	COLOR
BW	BROWN—WHITE TRACER	BLW	BLUE—WHITE TRACER	GW	GREEN—WHITE TRACER
BK	BLACK	BLR	BLUE—RED TRACER	Y	YELLOW
BKG	BLACK—GREEN TRACER	R	RED	YBK	YELLOW—BLACK TRACER
BKBL	BLACK—BLUE TRACER	RW	RED—WHITE TRACER	YG	YELLOW—GREEN TRACER
BKY	BLACK—YELLOW TRACER	RY	RED—YELLOW TRACER	YR	YELLOW—RED TRACER
BKR	BLACK—RED TRACER	RBK	RED—BLACK TRACER	W	WHITE
BKW	BLACK—WHITE TRACER	G	GREEN	WR	WHITE—RED TRACER
BL	BLUE	GBK	GREEN—BLACK TRACER	WBK	WHITE—BLACK TRACER
		B	BROWN		

FUSE DATA

Circuit	No. Used	Capacity
LIGHTING	1	30 AMP
ACCESSORY	1	30 AMP
CLOCK	1	3 AMP
DIRECTION INDICATOR	1	10 AMP
WEATHERMASTER	1	14 AMP
RADIO	1	20 AMP

HUDSON WIRING DIAGRAM, 1946, MODELS SIX AND EIGHT CYLINDERS

Courtesy of Hudson Motor Car Company

Hudson Model 51-52-58, 6-Cylinder Year 1946 Series

Battery National **Type** A 51 **Volts** 6 **Amps.**
Frame Connection Positive

Lighting Headlights Sealed Beam, 30-40 Watts
Tail and Stop Mazda 1154-21-3 CP., 6-8 Volts. **Dash** 2 CP., 6-8 Volts
Parking Lights With Indicator, 21-3 CP., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 38 Amps. Hot **Speed** 35 M.P.H.
Regulation 3d Brush and Voltage Reg.
Relay Air Gap **Contact Gap**

Ignition Auto-Lite **Contact Breaker Gap.** .020″
Spark Plug—Size 14 M.M. **Gap.** .032″
Firing Order 1-5-3-6-2-4
Timing ½″ B.T.D.C.

Engine 6 Cyl. **Bore** 3″ **Stroke** 5″ **Taxable H.P.** 21.6
Piston Ring—Width Oil 2—$\frac{3}{16}$″-$\frac{5}{32}$″, Comp. 2—$\frac{3}{32}$″
Diam. 3″ **Gap**
Oiling—Type Duo-Flo Plunger. **Capacity** Dry 5½ Qts., refill 4½ Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .010″ Hot
Exhaust Timing—Open **Close**
Exhaust Clearance .012″ Hot

Carburetor Carter 1″ Duplex Down-draft

Cooling System Cent., pump **Type** Belt Drive **Capacity** 13 Qts.

Steering **Camber** ¼° to ¾° **Caster** —¼° to +¼° **Toe-in** 0 to $\frac{1}{8}$″

Clutch Wet **Facings** Fluid, Cork Insert—9″

Gear Ratio Various **Type** Helical Bevel

Axle Semi-Floating

Brakes Bendix Hydraulic	**Front**	All Shoes	**Lining Clearance**	.0075″
	Rear / **Hand**	10″ Diam.	**Mechanical Follow-Up** 1¼″	
	Lining	1¾″ Wide	**Diagram**	

Lincoln **Model 1946 66H** **Year 1946** **Series**

Battery **Type** 17 Plates per cell **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting Headlights Sealed Beam 30-40 Watts
Tail and Stop 3-21 CP., 6-8 Volts **Dash** 1½ CP., 6-8 Volts
Parking Lights 3 CP., 6-8 Volts

Starter and Generator

Generator **Max. Chg. Rate** 30 Amps. **Speed**
Regulation Voltage Reg. **Cut-in** 6.1 to 6.3 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014″ to .016″
Spark Plug—Size **Gap**
Firing Order 1-4-9-8-5-2-11-10-3-6-7-12
Timing 4° B.T.D.C.

Engine 75° Viz. **Bore** 2.937″ **Stroke** 3.75″ **Taxable H.P.** 41.4
Piston Ring—Width
Diam. **Gap**
Oiling—Type **Capacity** 5 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance Zero
Exhaust Timing—Open **Close**
Exhaust Clearance Zero

Carburetor Dual Down-draft

Cooling System Centrifugal **Type** Belt Drive **Capacity** 27 Qts.

Steering **Camber** **Caster** **Toe-in**

Clutch Dry **Facings** Single Plate

Gear Ratio 4.22 to 1 **Type** Hypoid

Axle ¾ **Floating**

Brakes All Shoes
Hydraulic **Hand** Mechanical Rear Wheels **Diagram**
Lining Forward Shoe 13.12″ x 1.705″ to 1.735″ x .192″ to .205″
Reverse Shoe 10.08″ x 1.705″ to 1.735″ x .192″ to .205″

Mercury **Model Mercury 69M** **Year 1946** **Series**

Battery **Type**—17 Plates per Cell **Volts** 6 **Amps.** 120
Frame Connection Positive

Lighting **Headlights** Sealed Beam, 30-40 Watts
Tail and Stop 3-21 CP., 6-8 Volts **Dash** 1½ CP., 6-8 Volts
Parking Lights 3 CP., 6-8 Volts

Starter and Generator

Generator **Max. Chg. Rate** 30 Amps. **Speed**
Regulation Voltage Reg. **Cut-in** 6.1 to 6.3 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .014" to .016"
Spark Plug—Size **Gap**
Firing Order 1-5-4-8-6-3-7-2
Timing 4° B.T.D.C.

Engine 90° V8 **Bore** 3.187" **Stroke** 3.75 **Taxable H.P.** 32.5
Piston Ring—Width
Diam. **Gap**
Oiling—Type **Capacity** 5 Qts.

Valves **Intake Timing—Open** **Close**
Intake Clearance .010" to .012"
Exhaust Timing—Open **Close**
Exhaust Clearance .014" to .016"

Carburetor Dual Down-draft

Cooling System Centrifugal **Type** Belt Drive **Capacity** 22 Qts.

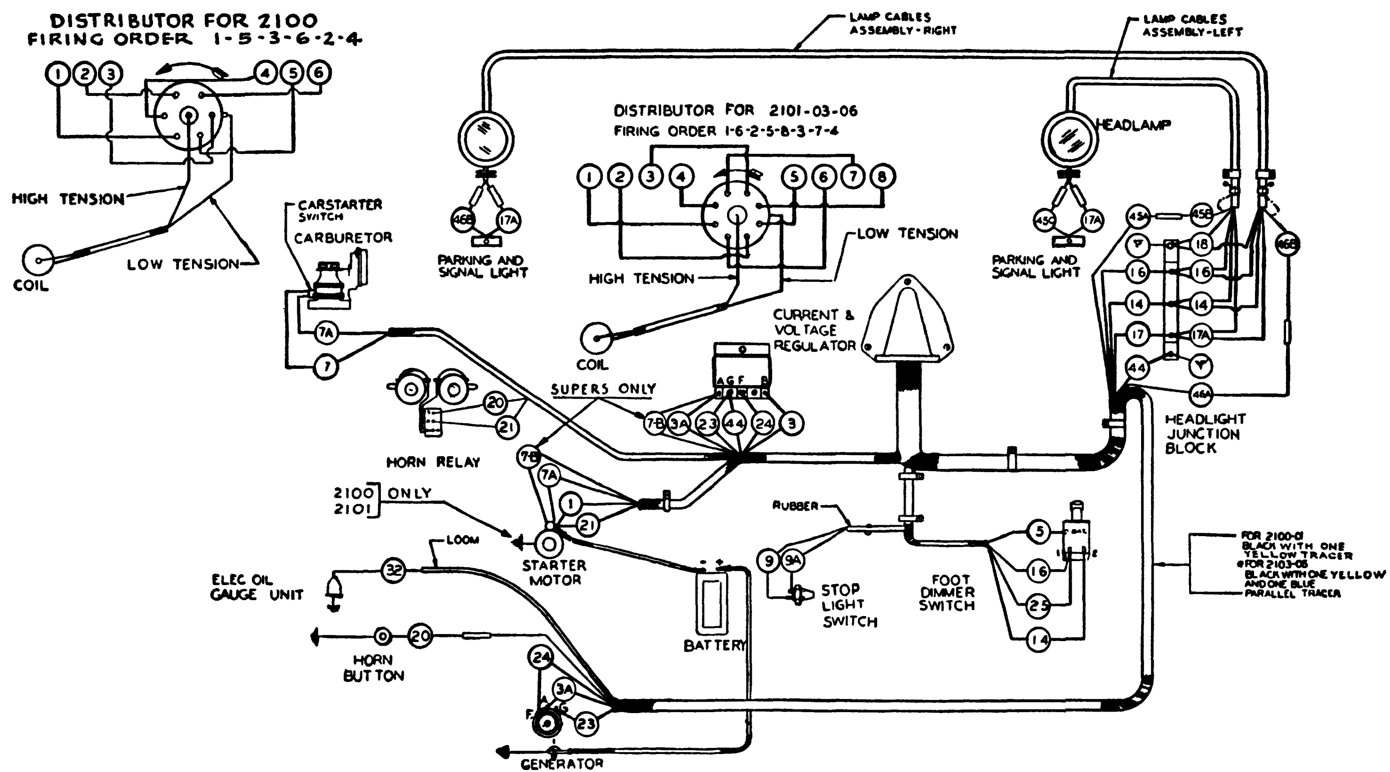
Steering **Camber** **Caster** **Toe-in**

Clutch Dry **Facings** Single Plate

Gear Ratio 3.54 to 1 **Type**

Axle ¾ Floating

Brakes All Shoes
Hydraulic **Hand** Mechanical Rear Wheels **Diagram**
Lining Forward Shoe 13.12" x 1.705" to 1.735" x .195" to .205"
Reverse Shoe 10.08" x 1.705" to 1.735" x .195" to .205"



PACKARD WIRING DIAGRAM, 1946, MODEL 2100, 2101-2111, 2103-2106, MODEL SERIES ST

Courtesy of Packard Motor Car Company

LEGEND

NO.	GAUGE	COLOR	LOCATION
1	10	Red	Starter Motor Switch to Ammeter
3	10	Black	Ammeter to Regulator
3A	10	Red	Generator to Regulator
3B	12	Black	Ammeter to Ignition Switch
3C	12	Black	Ignition Switch to Headlight Switch
3D	16	Black	Headlight Switch to Map Light
5	14	Black	Headlight Switch to Foot Dimmer Switch
7	16	Black	Ignition Switch to Car Starter Switch
7A	16	Black	Car Starter Switch to Starter Solenoid Switch
7B	16	Black	Starter Solenoid Switch to Voltage Regulator
8	16	Black	Panel Light Switch to Rear Wiring Harness
8A	16	Black	Front Harness to Rear Tail Lights
8B	16	Black	Panel Light Switch to Speedometer Pointer Light
8C	16	Black	Headlight Switch to Panel Light Switch
8D	16	Black	Panel Light Switch to Panel Lights
8E	14	Black	Cigar Lighter to Headlight Switch
9	16	Green	Headlight Switch to Stoplight Switch
9A	16	Green	Stoplight Switch to Rear Wiring Harness
9B	16	Green	Front Harness to Stoplights
11	16	Black	Ignition Switch to Gasoline Gauge (Instr.)
11A	18	Tan with Black and Red Tracer	Gasoline Gauge (Instr.) to Gasoline Gauge (Tank)
14	14	Red	Foot Dimmer Switch to Headlight (City)
16	14	Green	Foot Dimmer Switch to Headlights (Drive)
17	16	Black with Red Tracer	Headlight Switch to Junction Block
17A	16	Blue	Junction Block to Parking Lights
18	14	Black	Headlights to Junction Block (Ground)
20	16	Brown	Horn Button to Horns
21	12	Black	Horns to Starter Motor Switch
23	14	Black	Generator to Voltage Regulator Ground
24	18	Brown	Generator to Voltage Regulator Field
25	18	White	Foot Dimmer Switch to Indicator Light
32	16	Yellow with Black Tracer	Oil Gauge Unit to Gauge
35	18	Red	Headlight Switch to Clock
36	18	Black	Panel Light Switch to Clock
37	18	White	Clock to Center Panel Screw (Lower Right)
39	16	Red	Ignition Switch to Electric Windshield Wiper Unit
40	16	Green	Electric Windshield Wiper Motor to Ground
43	16	Black	Gasoline Gauge to Oil Gauge
44	14	Black	Voltage Regulator to Junction Block (Ground)
45	16	Green with Black Tracer	Electrical Junction Connector to Rear Direction Signal Light (Left)
45A	16	Green with Black Tracer	Electrical Junction Connector to Lamp (Front Cable Assembly) (Left)
45B	16	White	Front Harness to Signal Lamp Cable (Left)
45C	16	Yellow	Lamp Front Cable to Signal Lamp (Left)
46	16	Yellow	Electrical Junction Connector to Rear Direction Signal Light (Right)
46A	16	Yellow	Electrical Junction Connector to Lamp (Front Cable Assembly) (Right)
46B	16	Yellow	Front Harness to Signal Light (Right)
47	18	Green with Black Tracer	Direction Signal Switch to Electrical Junction Connector
47A	18	Green with Black Tracer	Electrical Junction Connector to Pilot Light (Right)
47B	18	Green with Black Tracer	Pilot Light (Right) to Post "P" on Flasher Unit
48	18	Yellow	Direction Signal Switch to Electrical Junction Connector
48A	18	Yellow	Electrical Junction Connector to Pilot Light (Left)
48B	18	Yellow	Pilot Light (Left) to Post "P" on Flasher Unit
49	16	Black	Flasher Unit (Post "X") to Gasoline Gauge (Feed)
49A	18	Black	Flasher Unit (Post "L") to Direction Signal Switch
50	12	Black	From Starter Motor Switch to Relay Post No. 1
51	14	Yellow	From Relay Post No 3 to Solenoid Post No. 3
52	18	Brown	From Relay Post No. 4 to Overdrive Indicator Light
53	18	Brown	From Solenoid Post No. 7 to Indicator Light
54	12	Black	From Relay Post No. 4 to Solenoid Post No. 4
55	16	Green	From Relay Post No. 2 to Ignition Coil-Low Tension Post
56	14	Green	From Relay Post No. 6 to Solenoid Post No. 6
57	16	Black with Red Tracer	From Relay Post No. 5 to Overdrive Lockout Switch
58	16	Black with Red Tracer	From Kick Switch to Overdrive Lockout Switch
59	16	Black with Red Tracer	From Kick Switch to Governor Switch

Packard Model 2100 Year 1946 Series 21ST

Battery Willard **Type** SW-1D-100 **Volts** 6 **Amps.** 100
Frame Connection Positive

Lighting Headlights Sealed Beam 40-30 Watts
Tail and Stop 21-3 CP., 6-8 Volts **Dash** 2 CP., 6-8 Volts
Parking Lights and Direction Signal 21-3 CP., 6-8 Volts

Starter and Generator Auto-Lite and Delco

Generator Auto-Lite and Delco
Max. Chg. Rate 35 Amps. **Speed** 800 R.P.M. Delco, 920 R.P.M. Auto-Lite
Regulation Voltage Reg. **Cut-in** 6½ to 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .018"-.022"
Spark Plug—Size 10 M.M. **Gap** .025" to .030"
Firing Order 1-5-3-6-2-4
Timing 4° B.T.D.C.

Engine Packard **Bore** 3½" **Stroke** 4¼" **Taxable H.P.** 29 4
Piston Ring—Width—Oil 1—.186"-.1865"
Comp. 2—No. 1—.093"-.0935", No. 2—.1235"-.124"
Diam. 3¼" **Gap** Oil—.007"-.015", Comp. .007"-017"
Oiling—Type Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 1° B.T.D.C. **Close** 39° A.B D.C.
Intake Clearance .007" Warm
Exhaust Timing—Open 45° B.B.D.C. **Close** 5° A.T D.C.
Exhaust Clearance .010" Warm

Carburetor Carter WA1-530-S Down-draft 1¼" Duplex

Cooling System Centrifugal **Type** Belt Drive **Capacity** 3½ Gals

Steering **Camber** 0°±¼° **Caster**—1° to + ½° **Toe-in** 0" to + 1/16"-0

Clutch Dry **Facings** Single Plate 6" x 9½" x .125"

Gear Ratio 4.3 to 1 **Type** Hypoid

Axle Semi-Floating

Brakes Hydraulic 2-Shoe
Front Primary 1¾" x 3/16" x 11½"
Rear Primary 1¾" x 3/16" x 10⅝"
Front Secondary 1¾" x 3/16" x 13"
Rear Secondary 1¾" x 3/16" x 12"
Hand
Lining Marshall 2201H8 Primary
Marshall B50 Secondary
Diagram

Packard **Model 2101-2111** **Year 1946** **Series 21ST**

Battery Willard **Type** SW-1D 100 **Volts** 6-8 **Amps.** 100
Frame Connection Positive

Lighting Headlights Sealed Beam, 30-40 Watts
Tail and Stop 21-3 C.P., 6-8 Volts **Dash** 2 CP., 6-8 Volts
Parking Lights and Directional Signal 21-CP., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed** } 920 R.P.M.
Regulation Voltage Reg. **Cut-in** } 6½ to 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .0125" to .0175"
Spark Plug—Size 10 M.M. **Gap** .025"-.030"
Firing Order 1-6-2-5-8-3-7-4
Timing 5° B.T.D.C.

Engine Packard **Bore** 3¼" **Stroke** 4¼" **Taxable H.P.** 33.8
Piston Ring—Width Oil 1—.186"-.1865"
Comp. 2—No. 1—.0925"-0935", No. 2—.1235" to .124"
Diam. 3¼" **Gap** Oil—.007"-.015", Comp. .007"-.017"
Oiling—Type Gear **Capacity** 5½ Qts.

Valves **Intake Timing—Open** 1° B.T.D.C. **Close** 39° A.B.D.C.
Intake Clearance .007" Warm
Exhaust Timing—Open 45 B.B.D.C. **Close** 5° A.T.D.C.
Exhaust Clearance .010" Warm

Carburetor Carter WDO-512-S Down-draft 1¼" Duplex

Cooling System Centrifugal **Type** Belt Drive **Capacity** 4¼ Gals.

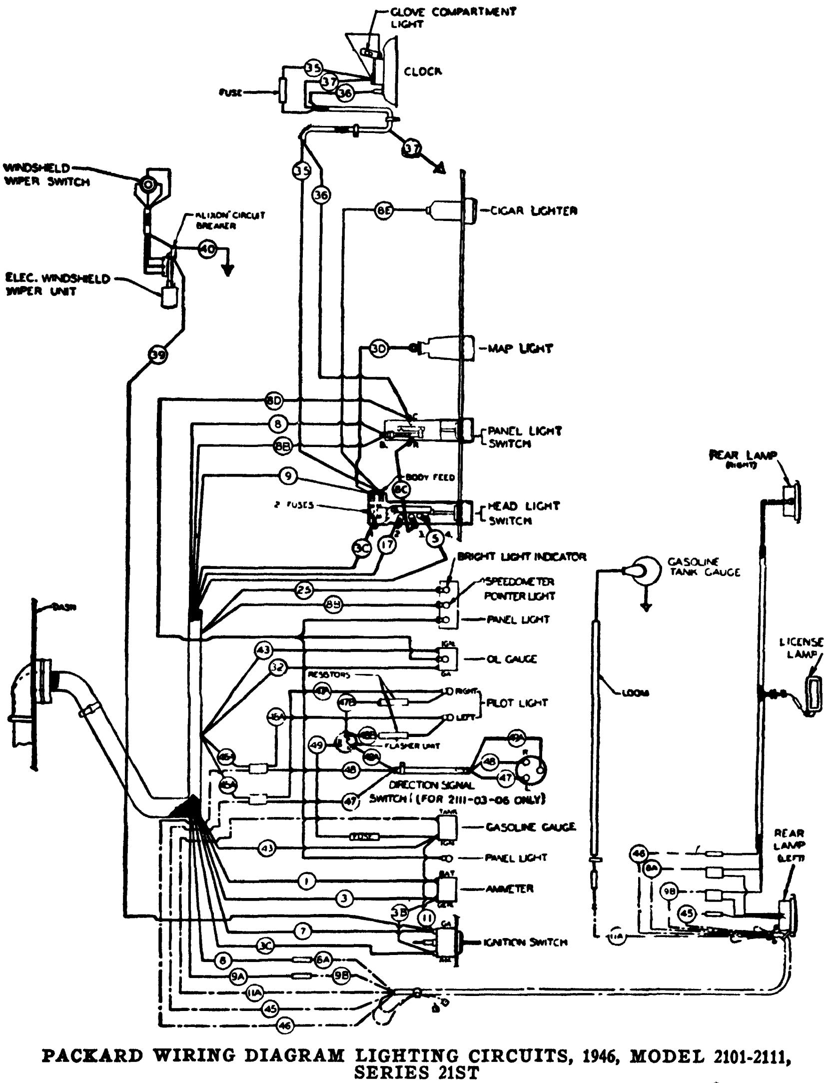
Steering **Camber** 0° ± ¼° **Caster** 1°- ± ½° **Toe-in** 0" ± 1/16"-0

Clutch Dry **Facings** Single Plate 6" x 10" x .125"

Gear Ratio 4.1 to 1 **Type** Hypoid

Axle Semi-Floating

Brakes Hydraulic 2-Shoe
Front Primary 1¾" x 3/16" x 11½"
Front Secondary 1¾" x 3/16" x 11½"
Rear Primary 1¾" x 3/16" x 13"
Rear Secondary 1¾" x 3/16" x 13"
Hand
Lining Marshall 2201H8 Primary
Marshall B50 Secondary
Diagram



PACKARD WIRING DIAGRAM LIGHTING CIRCUITS, 1946, MODEL 2101-2111, SERIES 21ST

Courtesy of Packard Motor Car Company

Packard Model 2103-2106 Year 1946 Series 21ST

Battery Auto-Lite **Type** 17ZR 17-Plate **Volts** 6-8 **Amps.** 120
Frame Connection Positive

Lighting Headlights Sealed Beam, 30-40 Watts
Tail and Stop 21-3 CP., 6-8 Volts **Dash** 2 CP., 6-8 Volts
Parking Lights and Direction Signal 21-3 CP., 6-8 Volts

Starter and Generator Auto-Lite

Generator Auto-Lite **Max. Chg. Rate** 35 Amps. **Speed** 780 R.P.M.
Regulation Voltage Reg. **Cut-in** 6½ to 7 Volts
Relay Air Gap **Contact Gap**

Ignition **Contact Breaker Gap** .0125"-.0175"
Spark Plug—Size 10 M.M. **Gap** .025"-.030"
Firing Order 1-6-2-5-8-3-7-4
Timing 4° B.T.D.C.

Engine Packard **Bore** 3½" **Stroke** 4⅝" **Taxable H.P.** 39.2
Piston Ring—Width Oil—1-.186"-1865"
Comp. 2—No. 1—.0930"-.0935", No. 2—.1235"-.124"
Diam. 3½" **Gap** Oil .007"-.015", Comp. .007"-.017"
Oiling—Type Gear **Capacity** 7 Qts.

Valves **Intake Timing—Open** 4° B.T.D.C. **Close** 51° A.B.D.C.
Intake Clearance Automatic
Exhaust Timing—Open 49° B.B.D.C. **Close** 10° A.T.D.C.
Exhaust Clearance Automatic

Carburetor Carter WDO-531 Down-draft 1¼" Duplex

Cooling System Centrifugal **Type** Belt Drive **Capacity** 5 Gals.

Steering **Camber** 0° ± ¼° **Caster** 1° ± ½° **Toe-in** 0- + $\frac{1}{16}$"-0

Clutch Dry **Facings** Single Plate 6⅝" x 11" x .125"

Gear Ratio 3.92 to 1 **Type** Hypoid

Axle Semi-Floating

Brakes Hydraulic 2-Shoe
Front Primary 2¼" x $\frac{3}{16}$" x 11½"
Front Secondary 2" x $\frac{3}{16}$" x 11½"
Rear Primary 2¼" x $\frac{3}{16}$" x 13"
Rear Secondary 2" x $\frac{3}{16}$" x 13"
Hand
Lining Marshall 2201H8 Primary
Marshall B-50 Secondary
Diagram

Plymouth Model P-15 Year 1946 Series

Battery Auto-Lite **Type** 15-Plate **Volts** 6 **Amps.** 95
Frame Connection Positive

Lighting Headlights Sealed Beam
Dash, Stop 21 CP., 6-8 Volts **Tail** 3 CP., 6-8 Volts
Parking Lights 3 CP., 6-8 Volts

Starter and Generator

Generator **Max. Chg. Rate** 35 Amps. **Speed** 2,200 R.P.M., 25 M.P.H.
Regulation Vibrator **Cut-in** 6.6 to 6.9 volts
Relay Air Gap **Contact Gap**

Ignition Solar **Contact Breaker Gap** .020″
Spark Plug—Size 14 M.M. **Gap** .025″
Firing Order 1-5-3-6-2-4
Timing T.D.C.

Engine 6 Cyl. **Bore** 3¼″ **Stroke** 4⅜″ **Taxable H.P.** 25.35
Piston Ring—Width Oil—2-$\frac{5}{32}$″ Comp 2—$\frac{3}{32}$″
Diam. 3¼″ **Gap** Oil—.007″-.015″, Comp. .007″-.015″
Oiling—Type Gear **Capacity** 5 Qts.

Valves **Intake Timing—Open** 12° B.T.D.C. **Close** 44° A.B.D.C.
Intake Clearance .008″ Hot, for Valve Timing .014″ Cold
Exhaust Timing—Open 50° B.B.D.C. **Close** 6° A.T.D.C.
Exhaust Clearance .010″ Hot, for Valve Timing, .014″ Cold

Carburetor Carter (Ball and Ball) 1½″ Down-draft

Cooling System Centrifugal **Type** Belt Drive **Capacity** 3¾ Gals.

Steering **Camber** 0° to ¼° **Caster** 1° to +1° **Toe-in** 0 to $\frac{1}{16}$″

Clutch Dry **Facings** Single Plate 2, 9¼″ x 6″ x .125″

Gear Ratio 3.9-1 **Type** Hypoid

Axle Semi-Floating

Brakes Hydraulic **Front** 21″ x 2″ x $\frac{13}{64}$″ **Clearance Toe** .006″ **Heel** .006″
Rear 18½″ x 2″ x $\frac{13}{64}$″ **Clearance Toe** .006″ **Heel** .006″
Hand Transmission, 16$\frac{11}{16}$″ x 2″ x $\frac{5}{32}$″ Woven Asbestos
Lining Molded Asbestos **Diagram**

GLOSSARY

THE following glossary of automobile terms is not intended in any sense as a dictionary and only words used in the articles themselves have been defined. The definitions have been made as simple as possible, but if other terms unfamiliar to the reader are used, these should be looked up in order to obtain the complete definition.

A

A. A. A.: Abbreviation for American Automobile Association.

Abrasive: Any hard substance used for grinding or wearing away other substances.

Absorber, Shock: See "Shock Absorber".

Accelerate: To increase the speed.

Acceleration: The rate of change of velocity of a moving body. In automobiles, the ability of the car to increase in speed. Pickup.

Accelerator: Device for rapid control of the speed for quick opening and closing of the throttle. Usually in the form of a pedal, spring returned, the minimum throttle opening being controlled by the setting of the hand throttle.

Accessory: A subordinate machine that accompanies or aids a more important machine; as, a horn is an accessory of an automobile.

Accumulator: A secondary battery or storage battery. It usually consists of chemically prepared lead plates combined with an acid solution Upon being charged with an electric current from a primary source, a chemical change takes place which enables the plates in their turn to give a current of electricity when used as a source of power, the plates at the same time returning to their original chemical state.

Acetone: A liquid obtained as a by-product in the distillation of wood alcohol, and used in connection with reservoirs for storing acetylene for automobile lights, as it dissolves many times its own volume of acetylene gas.

Acetylated Alcohol: Alcohol which has been denatured by the addition of acetylene, which also increases its fuel value. See "Alcohol, Denatured".

Acetylene: A gaseous hydrocarbide used as an illuminant, is usually generated for that purpose by the action of water on calcium carbide.

Acetylene Generator. A closed vessel in which acetylene gas may be produced by the action of water on calcium carbide and which supplies the gas under uniform pressure.

Acetylene Lamp: A lamp which burns acetylene gas.

Acetylite: Calcium carbide which has been treated with glucose. It is used to obtain a more uniform and slower production of acetylene gas than can be obtained with the untreated calcium carbide.

Acid: In connection with automobiles the term usually means the liquid or electrolyte used in the storage battery. See "Electrolyte".

Acid Cure. Method of rapid vulcanization of rubber without heat. Used in tire repairs. The agent is sulphur chloride.

Acidimeter. An instrument for determining the purity of an acid.

Active Material: Composition in grids that forms plates of a storage battery. It is this material in which the chemical changes occur in charging and discharging.

Adapter: Device by which one type of lamp burner may be used instead of the one for which the lamp was designed. Usually a fitting by which a gas or oil lamp may be converted into an electric lamp.

Adhesion: That property of surfaces in contact by virtue of which one of them tends to stick to the other. It is used as synonymous with friction. The adhesion of wheels acts to prevent slipping.

Adjustment: The slackening or tightening up of parts to compensate for wear, reduce friction, or secure better contact.

Admission: In a steam engine, the letting in of the steam to the cylinder; in gas engine, the letting in of mixture of gas and air to the cylinder.

Advanced Ignition: Usually called *advancing the spark.* Setting the spark of an internal-combustion motor so that it will ignite the charge at an earlier part of the stroke.

Advance Sparking: A method by which the time of occurrence of the ignition spark may be regulated, by completing the electric circuit at the earlier period.

Advancing the Spark: See "Advanced Ignition"

Aerodynamics: The science of atmospheric laws, i.e., the effects produced by air in motion.

After-Burning: Continued burning of the charge in an internal-combustion engine after the explosion.

After-Firing: An explosion in the muffler or exhaust passages.

A-h: Abbreviation for *ampere hour.*

Air Bottle: A portable container holding compressed air or carbon dioxide for tire inflation.

Air-Bound: See "Air Lock"

GLOSSARY

Air Compressor: A machine for supplying air under pressure for inflating tires, starting the motor, etc.

Air Cooled: Cooled by air direct. Usually referring to the cylinder of an engine, whose heat caused by the combustion within it is carried away by air convection and radiation.

Air Cooling: A system of dispersing by air convection the heat generated in the cylinder of an internal-combustion motor.

Air Intake: An opening in a carbureter to admit air.

Air Leak: Entrance of air into the mixture between carbureter and cylinder.

Air Lock: Stoppage of circulation in the water or gasoline system caused by a bubble of air lodging in the top of a bend in the pipe.

Air Pump: A pump operated by the engine or by hand to supply air pressure to the oil tank or gasoline tank; sometimes called *pressure pump*.

Air-Pump Governor: A device to regulate the speed of the air pump so as to give a uniform air pressure.

Air Resistance: The resistance encountered by a surface in motion. This resistance increases as the square of the speed, which makes it necessary to employ four times as much power in order to double a given speed.

Air Tube: See "Pneumatic Tire".

Airless Tire: Name of special make of non-puncturable resilient tire.

A. L. A. M.: Abbreviation for Association of Licensed Automobile Manufacturers, now out of existence.

A. L. A. M. Horsepower Rating: The horsepower rating of an automobile found by the standard horsepower formula approved by the Association of Licensed Automobile Manufacturers. Since the dismemberment of this organization, the formula is usually called the S.A.E. rating. This formula is h.p. = bore of cylinder (in inches) squared × No. of cylinders ÷ 2.5, at a piston speed of 1000 feet per minute.

Alarm, Low-Water: See "Low-Water Alarm".

Alcohol: A colorless, volatile, inflammable liquid which may be used as fuel for internal-combustion engines.

Alcohol, Denatured: Alcohol rendered unfit for drinking purposes by the addition of wood alcohol, acetylene, and other substances.

Alignment: The state of being exactly in line. Applied to crankshafts and transmission shafts and to the parallel conditions of the front and rear wheels on either side.

Alternating Current: Electric current which alternates in direction periodically.

Ammeter: An instrument to measure the values of current in an electric circuit directly in amperes. Also called *ampere meter*.

Amperage: The number of amperes, or current strength, in an electric circuit.

Ampere: The practical unit of rate of flow of electric current, measuring the current intensity.

Ampere Hour: A term used to denote the capacity of a storage battery or closed-circuit primary battery. A battery that will deliver three amperes for six hours is said to have an eighteen-ampere-hour capacity.

Ampere Meter: See "Ammeter".

Angle-Iron Underframe: An underframe constructed of steel bars whose cross section is a right angle.

Anneal: To make a metal soft by heating and cooling. To draw the temper of a metal.

Annular Gear: A toothed wheel upon which the teeth are formed on the inner circumference.

Annular Valve: A circular valve having a hole in the center.

Annunciator: An installation of electric signals or a speaking tube to allow the passengers in an enclosed car to communicate with the driver.

Anti-Freezing Solution: A solution to be used in the cooling system to prevent freezing in cold weather; any harmless solution whose freezing point is somewhat below that of water may be used.

Anti-Friction Metal: Various alloys of tin and lead used to line bearings, such as Babbitt metal, white metal, etc.

Anti-Skid Device: Any device which may be applied to the wheels of a motorcar to prevent their skidding, such as tire coverings with metal rivets in them, chains, etc.

Apron: Extensions of the fenders to prevent splashing by mud or road dirt.

Armature: In dynamo-electric machines, the portion of a generator in which the current is developed, or in a motor, the portion in which the current produces rotation. In most generators in automobile work, the armature is the rotating portion. In magnetic or electromagnetic machines the armature is the movable portion which is attached to the magnetic poles.

Armature Core: The iron portion of the armature which carries the windings and serves as part of the path for the magnetic flux.

Armature Shaft: The shaft upon and with which the armature rotates.

Armature Winding: Electrical conductors, usually copper, in an armature, and in which the current is generated, in case of a generator, or in which they produce rotation in a motor.

Artillery Wheel: A wheel having heavy wood spokes.

Aspirating Nozzle: An atomizing nozzle to make the liquid passing through it pass from it in the form of a spray.

Assembled Car: A car whose chief parts, such as engine, gearset axles, body, etc., are manufactured by different parts makers, only the final process of putting them together being carried out in the car-making plant.

Atmospheric Line: A line drawn on an indicator diagram at a point corresponding with the pressure of the atmosphere.

Atmospheric Valve: See "Suction Valve".

Atomizer: A device by which a liquid fuel, such as gasoline, is reduced to small particles or to a spray; usually incorporated in the carbureter.

Auto: (1) Popular abbreviation for automobile. (2) A Greek prefix meaning self.

Auto-Bus: An enclosed motor-driven public conveyance, seating six or more people; usually has a regular route of travel.

Autocar: A motorcar or automobile; a trade name for a particular make of automobile.

Auto-Cycle: See "Motorcycle".

Autodrome: A track especially prepared for automobile driving, particularly for races.

Autogenous Welding: See "Welding, Autogenous".

Auto-Igniter: A small magneto generator or dynamo for igniting gasoline engines, the armature of which is connected with the flywheel by gears or by friction wheels, so that electric current is supplied as long as the engine revolves.

Autoist: One who uses an automobile.

Automatic Carbureter: A vaporizer or carbureter for gasoline engines whose action is entirely automatic.

Automatic Cut-Out: See "Cut-Out, Automatic".

Automatic Spark Advance: Automatic variation of the instant of spark occurrence in the cylinder. Mechanical advancing and retarding of the spark to correspond with and controlled by variations in crankshaft speed.

Auto-Meter: Trade name for special make of combined speedometer and odometer.

Automobile: A motor-driven vehicle having four or more wheels. Some three-wheeled vehicles are properly automobiles, but are usually called *tricars*.

Automobilist: The driver or user of an automobile.

Auto Truck: A motor-driven vehicle for transporting heavy loads; a heavy commercial car.

Auxiliary Air Valve: Valve controlling the admission of air through the auxiliary air intake of a carbureter.

Auxiliary Air Intake: Opening through which additional air is admitted to the carbureter at high speeds.

Auxiliary Exhaust: Ports cut through cylinder walls to permit exhaust gases to be released from the cylinder when uncovered by the piston. These are sometimes used as an additional scavenging means for the regular exhaust valves.

Auxiliary Fuel Tank: See "Fuel Tank, Auxiliary".

Auxiliary Spark Gap: See "Spark Gap, Outside".

Axle: The spindle with which a wheel revolves or upon which it revolves.

Axle, Cambered: An axle whose ends are slanted downwards to camber the wheels.

Axle, Channel: An axle which is U-shaped in cross section.

Axle, Dead: Solid, fixed, stationary axle. An axle upon which the wheels revolve but which itself does not revolve.

Axle, Dropped: An axle in which the central portion is on a lower level than the ends.

Axle, Floating: A full-floating axle. A live axle in which the shafts support none of the car weight, but serve only to turn the wheels.

Axle, I-Beam: An axle whose cross section is in the shape of the letter I.

Axle, Live: An axle in which are comprised the driving shafts that carry the power of the motor to the driving wheels.

Axle, Semi-Floating: A live axle in which the driving shafts carry all of the car weight as well as transmitting the driving torque.

Axle, Three-Quarters Floating: A live axle in which the shafts carry a part of the weight of the car, while the housing carries the balance of the weight. It is intermediated by a floating axle and the semi-floating axle.

Axle, Trussed: An axle in which downward bending is prevented by a truss.

Axle, Tubular: An axle formed of steel tubing. Usually applied to the front axles, but sometimes used in referring to tubular shafts of rear axles.

Axle Casing: That part of a live axle that encloses the driving shafts and differential and driving gears. Axle housing.

Axle Housing: See "Axle Casing".

Axle Shaft: The member transmitting the driving torque from the differential to the rear wheels.

B

Babbitt: A soft metal alloy used for lining the bearings of shafts.

Back-Firing: An explosion of the mixture in the intake manifold or carbureter caused by the communication of the flame of explosion in the cylinders. Usually due to too weak a mixture. Popping.

Back Kick: The reversal of direction of the starting, caused by back-firing.

Backlash: The play between a screw and nut or between the teeth of a pair of gear wheels.

Back Pressure: Pressure of the exhaust gases due to improper design or operation of the exhaust system.

Baffle Plate: A plate used to prevent too free movement of a liquid in the container. In a gas engine cylinder, a plate covering the lower end of the cylinder to prevent too much oil being splashed into it. The plate has a slot through which the connecting rod may work.

Balance Gear: See "Differential Gear".

Balancing of Gasoline Engines: Insuring the equilibrium of moving parts to reduce the vibration and shocks.

Ball-and-Socket Joint: A joint in which a ball is placed within a socket recessed to fit it, permitting free motion in any direction within limits.

Ball Bearing: A bearing in which the rotating shaft or axle is carried upon a number of small steel balls which are free to turn in annular paths, called *races*.

Balladeur Train: A French name for a sliding change-speed gear.

Barking: The sound made by the explosions caused by after-firing.

Base Bearing: See "Main Bearing".

Base Explosion: See "Crankcase Explosion".

Battery: A combination of primary or secondary cells, as dry cells or storage cells.

Battery, Dry: See "Dry Battery".

Battery, Storage: See "Accumulator".

Battery Acid: The electrolyte in a storage battery.

GLOSSARY

Battery-Charging Plug: Power terminals to which the leads of a storage battery may be connected for charging the battery.

Battery Gage: (1) Voltmeter or ammeter or voltammeter for testing the specific gravity of the electrolyte in a secondary battery.

Battery Syringe: A syringe used to draw out a part of the electrolyte or solution from a storage battery cell to test its density and specific gravity.

Baume: A scale indicating the specific gravity or density of liquids and having degrees as units. Gasoline of a specific gravity of .735 has a gravity of 61 degrees Baumé.

Bearing: A support of a shaft upon which it may rotate.

Bearing, Annular Ball: A ball bearing consisting of two concentric rings, between which are steel balls.

Bearing, Ball: A bearing in which the rotating shaft and the stationary portion of the bearings are separated from sliding contact by steel balls. A steel collar fitted to the shaft rolls upon the balls, which in turn roll upon steel collar attached to the stationary portion of the bearing.

Bearing, Cup and Cone: A ball bearing in which the balls roll in a race, which is formed between a cone-shaped fixed collar and a cup-shaped shaft collar.

Bearing, Main: The bearing in which rotates the crankshaft of an engine.

Bearing, Plain: A bearing in which the rotating shaft is in sliding contact with the bearing supporting it.

Bearing, Radial: A bearing designed to resist loads from a direction at right angles to the axis of the shaft.

Bearing, Roller: A bearing in which the journal rests upon, and is surrounded by, hardened steel rollers which revolve in a channel or race surrounding the shaft.

Bearing, Thrust: A bearing designed to resist loads or pressures parallel with the axis of the shaft.

Bearing Cap: That portion of a plain bearing detachable from the stationary portion, and which holds the bearing bushing and shaft.

Bearing Surface: The projected area of a bearing in a perpendicular plane to the direction of pressure.

Beau de Rochas Cycle: The four-stroke cycle used in most internal-combustion engines. This cycle was proposed by M. Beau de Rochas and put into practical form by Dr. Otto. See "Four-Cycle".

Belt and Clutch Dressing: A composition to be applied to belts and clutches to prevent them from slipping.

Belt Drive: A method of transmitting power from the engine to the countershaft or jack shaft by means of belts.

Benzine: A petroleum product having a specific gravity between that of kerosene and gasoline. Its specific gravity is between 60 degrees and 65 degrees Baumé.

Benzol: A product of the distillation of coal tar. Coal tar benzine. Used as a rubber solvent and in Europe as a motor fuel.

Berline Body: A limousine automobile body having more than two seats in the back part.

Bevel-Gear: Gears the faces of whose teeth are not parallel with the shaft, but are on a beveled edge of the gear wheel.

Bevel-Gear Drive: Method of driving one shaft from another at an angle to the first. The chief method of transmitting the drive from the propeller shaft to the rear axle shafts.

B. H. P.: An abbreviation for brake horsepower.

Bicycle: A two-wheeled vehicle propelled by the pedaling of the rider.

Binding Posts: See "Terminals".

Bleeder: A by-pass in the sight-feed of a mechanical oiling system by which the oil delivered through that feed is allowed to pass out instead of going to the bearings.

Blister: A defect in tires caused by the separation of the tread from the fabric.

Block Chain: A chain used in automobiles, bicycles, etc., of which each alternate link is a steel block.

Blow-Back: The backward rushing of the fuel gas through the inlet valve into the carbureter.

Blower Cooled: A gas engine cooled by positive circulation of air maintained by a blower.

Blow-Off: A blow-out caused by the edge of the bead of tire becoming free from the rim and allowing the tube to protrude through the space thus formed.

Blow-Out: The rupture of both the inner tube and outer casing of a pneumatic tire.

Blow-Out Patch: See "Patch, Tire Repair".

Body: (1) The superstructure of an automobile; the part that resembles and represents the body of a horse-drawn vehicle. (2) In oils, the degree of viscosity. The tendency of drops of oils to hang together.

Body Hangers: Attachments to or extensions of the frame for holding the body of the vehicle. They should be properly called frame hangers.

Boiler: A vessel in which water is evaporated into steam for the generation of power.

Boiler, Fire-Tube: A tubular steam boiler in which the end plates are connected by a number of open ended thin tubes, the spaces around which are filled with water, the hot gases passing through the tubes.

Boiler, Flash: A steam boiler in which steam is generated practically instantaneously. There is practically no water or steam stored in the boiler. A flash generator.

Boiler, Water-Tube: A steam boiler in which the water is carried in metal tubes, around which the hot gases circulate.

Boiler Alarm: See "Low-Water Alarm".

Boiler Covering: A non-conducting substance used as a covering for boilers to prevent loss of heat by radiation.

Boiler-Feed Pump: An automatic and self-regulating pump for supplying a boiler with feed water.

Boiler-Feed Regulator: A device to make the feed-water supply of the boiler automatic.

Bonnet: (1) The hood or metallic cover over the front end of an automobile. See "Hood". (2) The cover over a pump-valve box, or a slide-valve casing. (3) A cover to enclose and guide the tail end of a

steam-engine-valve spindle or the cover of a piston-valve casing. (4) The pan underneath the engine in an automobile.

Boot: A covering to protect joints from dirt and water or to prevent the leakage of grease. (2) Space provided for baggage at the rear of a car.

Bore: The inside diameter of the cylinder.

Boss: An enlarged portion of a part to give a point for attachment of another part.

Bottom: The meshing of gears without clearance.

Bow Separator: A part to prevent chafing of the bows of a top when folded.

Boyle's Law of Gases: A law defining the volume and pressure of gases at constantly maintained temperatures. It states that the volume of a gas varies inversely as the pressure so long as the temperature remains the same; or, the pressure of a gas is proportional to its density.

Brake: An apparatus for the absorption of power by friction, and by clamping some portion of the driving mechanism to retard or stop the forward motion of the car.

Brake, Air-Cooled: A brake whose parts are ridged to present a large surface for transferring to the air the frictional heat generated in them.

Brake, Band: A brake which contracts upon the outside of a drum attached to some part of the driving mechanism.

Brake, Constricting Band: A form of brake applied by tightening a band around a pulley or drum.

Brake, Differential: A brake acting upon the differential gear.

Brake, Double-Acting: A brake which will hold when the drum is rotating in either direction.

Brake, Drum, and Band: See "Brake, Band".

Brake, Emergency: A brake intended to be used in case the service brake does not act to a sufficient extent.

Brake, Expanding-Band: A drum brake in which the braking force is exerted by a band forced outward against the inner rim of a pulley.

Brake, External-Contracting: A brake consisting of a drum affixed to a rotating part, the outer surface of which is encircled by a contracting band.

Brake, Foot: A brake designed to be operated by the driver's foot. A pedal brake. Usually the service brake.

Brake, Front-Wheel: A brake designed to operate on the front wheels of the car.

Brake, Gearset: A brake designed to act on the transmission shaft and attached to the gearbox.

Brake, Hand: A brake designed to be operated by means of a hand lever. Usually the emergency brake.

Brake, Hub: A brake consisting of a drum secured to one of the wheels. This is the usual type.

Brake, Internal: A brake in which an expanding mechanism is contained within a rotating drum, the expansion bringing pressure to bear on the drum.

Brake, Internal-Expanding: A brake consisting of a drum, against the inside of which may be expanded a band or a shoe.

Brake, Motor: A brake in an electric vehicle which acts upon the armature shaft of the motor.

Brake, Service: A brake designed to be used in ordinary driving. It is usually operated by the driver's foot.

Brake, Shoe: A brake in which a metal shoe is clamped against a revolving wheel.

Brake, Transmission: A brake designed to act upon the transmission shaft.

Brake, Water-Cooled: A brake through which water may be circulated to carry off the frictional heat.

Brake Equalizer: A mechanism applied to a system of brakes operated in pairs to assure that each brake shall be applied with equal force.

Brake Horsepower: The horsepower supplied by an engine as shown by the application of a brake or absorption dynamometer.

Brake Housing: A casing enclosing the brake mechanism.

Brake Lever: The lever by which the brake is applied to the wheel.

Brake Lining: The wearing surface of a brake; usually arranged to be easily replaced when worn.

Brake Pedal: Pedal by which the brake is applied.

Brake Pull Rod: A rod transmitting the tension from the lever or pedal to the movable portion of the brake proper.

Brake Ratchet: A device by which the brake lever or brake pedal can be set in position and retained there; usually consists of a notched quadrant with which a movable tongue on the lever head or pedal engages.

Brake Rod: The rod connecting the brake lever with the brake.

Brake Test: A test of a motor by means of a dynamometer to determine its power output at different speeds.

Braking Surface: The surface of contact between the rotating and stationary parts of a brake.

Braze: To join by brazing.

Brazing: The process of permanently joining metal parts by intense heat.

Breaker Strip: A strip of canvas placed between the tread and body of an outer tire casing to increase the wearing qualities.

Breather: An opening in the crankcase of a gas engine to permit pressure therein to remain equal during the movement of the pistons.

British Thermal Unit. The ordinary unit of heat. It is that quantity of heat required to raise the temperature of one pound of pure water one degree Fahrenheit at the temperature of greatest density of water.

Brougham Body: A closed-in automobile body having windows at the side doors, and in front, but with no extension of the roof over the front seat.

Brush Holder: In electrical machinery, an arrangement to hold one end of a connection flexible in contact with a moving part of the circuit.

B. T. U.: Abbreviation for *British Thermal Unit.*

Buckboard: A four-wheeled vehicle in which the body and springs are replaced by an elastic board or frame

Buckling: Irregularities in the shape of the plates of storage cells following a too rapid discharge.

Bumper: (1) A contrivance at the front of the car to minimise shock of collision, it consists of plungers working in tubes and gaining elasticity from springs. (2) A bar placed across the end of a car, usually the front end, to take the shock of collision and thus prevent damage to the car itself. A rubber or leather pad interposed between the axle and frame of a car.

Burner, "Torch" Igniter: A movable auxiliary vaporizer for starting the fire in steam automobile burners.

Bushing: A bearing lining. Usually made of anti-friction metal and capable of adjustment or renewal.

Bus-Pipe: A manifold pipe.

Butterfly Valve: A valve inserted in a pipe, usually circular and of nearly the same diameter as the pipe, designed to turn upon a spindle through its diameter and thus shut off or permit flow through the pipe. Usually employed for throttle valves and carbureter air valves.

Buzzer: (1) A name sometimes applied to the vibrator or trembler of a jump-spark ignition coil. (2) A device used in place of a horn, and consisting of a diaphragm which is made to vibrate rapidly by an electromagnet.

By-Pass: A small valve to provide a secondary passage for fluids passing through a system of piping.

C

C: Abbreviation for a centigrade degree of temperature.

Calcium Carbide: A compound of calcium and carbon used for the generation of acetylene by the application of water.

Calcium Chloride: A salt which dissolved in water is used as an anti-freezing solution.

Cam: A revolving disk, irregular in shape, fixed on a revolving shaft so as to impart to a rod or lever in contact with it an intermittent or variable motion.

Cam, Exhaust: A cam designed to operate the exhaust of an engine.

Cam, Ignition: A cam designed to operate the ignition mechanism. In magnetos it operates the make-and-break device.

Cam, Inlet: A cam designed to operate the inlet valve of an engine.

Camber: (1) The greatest depth of curvature of a surface. (2) The amount of bend in an axle designed to incline the wheels.

Camber of Spring: The maximum distance between the upper and lower parts of a spring under a given load.

Cambered Frame: A narrowing of the front of a motor car to permit of easier turning.

Cam Gear: The gear driving the camshaft of a gas engine. In a four-cycle engine this is the same as the two-speed gear.

Camshaft: A shaft by which the valve cams are rotated; also known as the *secondary shaft*.

Camshaft, Overhead: The camshaft carried along or above the cylinder heads, to operate overhead valves.

Camshaft Gears: The gears or train of gears by which the camshaft is driven from the crankshaft. Half-time gears, timing gears, distribution gears.

Canopy: An automobile top that can not be folded up.

Capacity of a Condenser: The quality of electricity or electrostatic charge. Of a storage battery, the amount of electricity which may be obtained by the discharge of a fully charged battery. Usually expressed in ampere hours.

Cape Hood: An automobile top which is capable of either being folded up or extended.

Car: A wheeled vehicle.

Carbide: See "Calcium Carbide".

Carbide Feed: A type of acetylene generator in which the calcium carbide is fed into the water.

Carbon Bridge: Formation of soot between points of spark plug.

Carbon Deposit: A deposit upon the interior of the combustion chamber of a gasoline engine composed of carbonaceous particles from the lubricating oil, too rich fuel mixture, or road dust.

Carbon Remover: A tool or solution for removing carbon deposits from the cylinder, piston, or spark plug of a gasoline engine.

Carbonization: The deposit of carbon.

Carbureter: An appliance for mixing an inflammable vapor with air. It allows air to be passed through or over a liquid fuel and to carry off a portion of its vapor mixed with the air, forming an explosive mixture.

Carbureter, Automatic: A carbureter so designed that either the air supply alone or both the air and gasoline supplies are regulated automatically.

Carbureter, Constant-Level: A carbureter the level of the gasoline in which is maintained automatically at a constant height. A float-feed carbureter.

Carbureter, Exhaust-Jacketed: A carbureter whose mixing chamber is heated by the circulation of exhaust gas.

Carbureter, Multiple-Jet: A carbureter having more that one spray nozzle or jet.

Carbureter, Water-Jacketed: A carbureter whose mixing chamber is heated by the circulation of water from the cooling system.

Carbureter Float: A buoyant part of the carbureter designed to float in the gasoline and connected to a valve controlling the flow from the fuel tank, designed to maintain automatically a constant level of the gasoline in the flow chamber.

Carbureter Float Chamber: A reservoir containing the float and in which a constant level of fuel is maintained.

Carbureter Jet: The opening through which liquid fuel is ejected in a spray from the standpipe of a carbureter nozzle.

Carbureter Needle Valve: A valve controlling the flow of fuel from the flow chamber to the standpipe.

Carbureter Nozzle: See "Carbureter Jet".

Carbureter Standpipe: A vertical pipe carrying the nozzle.

Carburetion: The process of mixing hydrocarbon particles with the air. The action in a carbureter.

Cardan Joint: A universal joint or Hooke's coupling.

Cardan Shaft: A shaft provided with a Cardan joint at each end.

Casing: The shoe or outer covering of a double-tube automobile tire.

Catalytic Ignition: See "Ignition,Catalytic".

Cell: One of the units of a voltaic battery.

Cell, Dry: See "Dry Cell".

Cell, Storage: See "Accumulator".

Cellular Radiator: A radiator in which the openings between the tubes are in the form of small cells. The same as a *honeycomb radiator*.

Cellular Tire: A cushion tire which is divided into compartments or cells.

Center of Gravity: That point in a body, which, if the body were suspended freely in equilibrium, would be the point of application of the resultant forces of gravity acting upon the body.

Center Control: The location of the gear-shift and emergency brake levers of a car in the center of a line parallel to the front of the front seat.

Centigrade Scale: The thermometer scale invented by Celsius. Used universally in scientific work.

Century. In automobiling, a hundred-mile run.

C. G. S. System: Abbreviation for centimeter-gram-second system of measurement; the standard system in scientific work.

Chain, Drive: A heavy chain by which the power from the motor may be transmitted to the rear wheels of an automobile.

Chain, Roller: A sprocket chain, the cross bars of whose links are rollers.

Chain, Silent: See "Silent Chain".

Chain, Tire: A small chain fastened about the tire to increase traction and prevent skidding.

Chain Wheel: A sprocket wheel for the transmission chains of a motor-driven vehicle.

Change-Speed Gear: See "Gear, Change-Speed".

Change-Speed Lever: See "Lever, Change-Speed".

Charge: The fuel mixture introduced into the cylinder of a gas engine. The act of storing up electric energy in an accumulator.

Charging: The passing of a current of electricity through a storage cell.

Charles' Law of Gases: See "Gases, Gay Lussac's Law of".

Chassis. The mechanical features of a motor car assembled, but without body, fenders, or other superstructure not essential to the operation of the car.

Chauffeur: In America this term means the paid driver or operator of a motor car. The literal translation from the French means stoker or fireman of a boiler.

Check, Steering: See "Steering Check".

Check Valve: An automatic or non-return valve used to control the admission of feed water in the boiler, etc.

Choke: The missing of explosions or poor explosions due to too rich mixture.

Circuit, Primary: See "Primary Circuit".

Circuit, Secondary: See "Secondary Circuit".

Circuit Breaker: A device installed in an electric circuit and intended to open the circuit automatically under predetermined conditions of current flow.

Circulating Pump: A pump which keeps a liquid flowing through a series of pipes which provides a return circuit. In a motor car, water and oil circulation is maintained by circulating pump.

Circulation Pump: A mechanically operated pump by which the circulation of water in the cooling system is maintained.

Circulating System: The method or series of pipes through which a continuous flow of water or oil is maintained and in which the liquid is sent through the system over and over.

Clash Gear: A sliding change-speed gear.

Clearance: (1) The distance between the road surface and the lowest part of the under-body of an automobile. (2) The space between the piston of an engine when at the extremity of its stroke, and the head of the cylinder.

Clearance, Valve: See "Valve Clearance".

Clearance Space: The space left between the end of the cylinder and the piston plus the volume of the ports between the valves and the cylinder.

Clevis: The fork on the end of a rod.

Clevis Pin: The pin passing through the ends of a clevis and through the rod to which the clevis is joined.

Clincher Rim: A wheel rim having a turned-in edge on each side, forming channels. Into this the edge or flange of the tire fits, the air pressure within locking the tire and rim together.

Clincher Tire: A pneumatic tire design to fit on a clincher rim.

Clutch: A device for engaging or disconnecting two pieces of shafting so that they revolve together or run free as desired.

Clutch Cone: A clutch whose engaging surfaces consist of the outer surface of the frustrum of one cone and the inner surface of the frustrum of another.

Clutch, Contracting-Band: A clutch consisting of a drum and band, the latter contracting upon the former.

Clutch, Dry-Plate: A clutch whose friction surfaces are metal plates, not lubricated.

Clutch, Expanding-Band: A clutch consisting of a drum and band, the latter expanding within the former.

Clutch, Jaw: A clutch whose members lock end to end by projections or jaws in one entering corresponding depressions in the other.

Clutch, Multiple-Disk: A clutch whose friction surfaces are metal plates or disks, alternate disks being attached to one member and the rest to the other member of the drive.

Clutch Brake: A device designed to stop automatically the rotation of the driven member of a clutch after disengagement from the driving member.

Clutch Lining: The wearing surface of a clutch. This may be easily removed and replaced when worn.

Clutch Pedal: The pedal by which the clutch may be disengaged, engagement being obtained automatically by means of a spring

Clutch Spring: A spring arranged to either hold a clutch out of gear or throw it into gear.

Coasting: The movement of the car without constant applications of the motive power, as in running downhill with the aid of gravity or on the level, through the momentum obtained by previous power applications.

Cock, Priming: A small cock, usually operated by a lever, for admitting gasoline to the carbureter to start its action.

Coil, Induction: See "Spark Coil".

Coil, Non-Vibrator: A coil so designed that it will supply a sufficient spark for the ignition with one make and break of the primary circuit.

Coil, Primary: See "Primary Coil".

Coil, Secondary: See "Secondary Spark Coil".

Coil, Spark: See "Spark Coil".

Coil, Vibrator: A spark coil with which is incorporated an electromagnetic vibrator to make and break the primary circuit.

Coil Vaporizer: An auxiliary vaporizer to assist in starting a steam boiler. It is a coil of tubing into which liquid gasoline is admitted and burned to start the generation of gas in the main burner.

Cold Test: The temperature in degrees Fahrenheit at which a lubricant passes from the fluid to the solid state.

Combustion Chamber: That part of an explosive motor in which the gases are compressed and then fired, usually by an electric spark.

Combustion Space: See "Clearance" and "Clearance Space".

Commercial Car: A motor-driven vehicle for commercial use, such as transporting passengers or freight.

Commutator: In the ignition system of an explosive motor, the commutator is a device to automatically complete the circuit of each of a number of cylinders in succession.

Commutator of Dynamo or Motor: That part of a dynamo which is designed to cause the alternating current produced in the armature to flow in one direction in the external circuit; in a motor, to change the direct current in the external circuit into alternating current.

Compensating Carbureter: An automatic attachment to a carbureter controlling either air or fuel admission, or both, so that the proportion of one to the other is always maintained under any vibration of power required.

Compensating Gear: See "Differential Gear".

Compensating Joint: See "Universal Joint".

Compound Engine: A multiple-expansion steam engine in which the steam is expanded in two stages, first in the high-pressure cylinder and then in the low-pressure cylinder.

Compression: (1) That part of the cycle of a gas engine in which the charge is compressed before ignition; in a steam engine it is the phase of the cycle in which the pressure is increased, due to compression of the exhaust steam behind the piston. (2) The greatest pressure exerted on the gas in the compression chamber.

Compression Chamber: The clearance volume above the piston in a gas engine; also called "Compression Space".

Compression Cock: See "Compression-Relief Cock".

Compression Line: The line on an indicator diagram corresponding to the phase of the cycle in which the gas is compressed.

Compression-Relief Cock: A small cock by which the compression chamber of an internal-combustion motor may be opened to the air and thus allow the compression in the cylinder to be relieved to facilitate turning by hand, or *cranking*.

Compression Space: See "Compression Chamber".

Compression Tester: A small pressure gage by which the degree of compression of the mixture in a gas-engine cylinder may be tested.

Compressor, Air: See "Air Compressor".

Condenser: (1) In a steam motor, an apparatus in which the exhaust steam is converted back into water. (2) A device for increasing the electric capacity of a circuit. Used in an ignition circuit to increase the strength of the spark.

Cone Bearing: A shaft bearing in which the shaft is turned to a taper and the journal turned to a conical or taper form.

Cone Clutch: A friction clutch in which there are two cones, one fitting within the other.

Connecting Rods: The part of an engine connecting the piston to the crank, and by means of which a reciprocating motion of the piston is converted into the rotary motion of the crank.

Constricting Band Brake: See "Brake, Constricting Band".

Constricting Clutch: A friction clutch in which a band is tightened around a drum to engage it.

Contact Breaker: A device on some forms of gasoline motors having an induction coil of the single jump-spark type, to open and close the electric circuit of the battery and coil at the proper time for the passage of the arc or spark at the points of the spark plug.

Contact Maker: See "Contact Breaker".

Continental Drive: Double-chain drive.

Control: The levers, pedals, etc., in general with the speed and direction of a car is regulated by the driver. In speaking of right, left, or center control, the gearshift and emergency brake levers only are meant.

Control, Spark: Method of controlling the power of an engine by varying the point in the stroke at which ignition takes place.

Control, Throttle: Method of governing the power of the engine by altering the area of the passage leading to the admission valve so that the amount of the fuel introduced into the cylinder is varied.

Controller, Electric: Apparatus for securing various combinations of storage cells and of motors so as to vary the speed of the car at will.

Converter: A device for changing alternating current into direct current for charging storage batteries, etc. Converters may be any of three kinds: rotary, electrolytic, or mercury-vapor. The mercury-vapor converter is most widely used.

Convertible Body: An automobile body which may be used in two or more ways, usually as an open or closed carriage, or in which several seats may be concealed, and raised to increase the seating capacity.

Cooling Fan: Fan used in automobiles to increase the current of air circulating around the cylinders, or through the radiator.

Cooling System: The parts of a gas engine or motor car by which the heat is generated in the cylinder by the combustion of the fuel mixture. See "Water Cooling" and "Air Cooling".

Cork Inserts: Pieces of cork inserted in friction surfaces of clutches or brakes to give softer action.

Cotter Pin: A split metal pin designed to pass through holes in a bolt and nut to hold the former in place.

Coulomb: The unit of measure of electrical quantity. Sometimes called "Ampere Second". It is equivalent to the product of the current in amperes by the number of seconds current has been flowing.

Counterbalance: Weights attached to a moving part to balance that part.

Countershaft: An intermediate or secondary shaft in the power-transmission system.

Coupé: An enclosed body seating one or two passengers and the driver, all within.

Coupling, Flexible: See "Universal Joint".

Cowl: That portion of the body of the car which forms a hood over the instrument board or dash.

Cowl Tank: A fuel tank carried under the cowl and immediately in front of the dash.

Crank: A lever designed to convert reciprocating motion into rotating motion or *vice versa;* usually in the form of a lever formed at an angle with the shaft, and connected with piston by means of connecting rod.

Crank, Starting: A handle made to fit the projecting end of the crankshaft of a gas engine, so that the engine may be started revolving by hand.

Crankcase: The casing surrounding the crank end of the engine.

Crankcase Explosion: Explosion of unburned gases in the crankcase.

Crank Chamber: The enclosed space of small engines in which the crank works.

Cranking: The act of rotating the motor by means of a handle in order to start it. Turning the flywheel over a few times causes the engine to take up its cycle, and after an explosion it continues to operate.

Crankpin: The pin by which the connecting rod is attached to the crank.

Crankshaft: The main shaft of an engine.

Crankshaft, Offset: A crankshaft whose center line is not in the same plane as the axis of its cylinders.

Creeping of Pneumatic Tires: The tendency of pneumatic tires to push forward from the ground, and thus around the rim, in the effort to relieve and distribute the pressure.

Cross Member: A structural member of the frame uniting the side members.

Crypto Gear: See "Planetary Gear".

Crystallization. The rearrangement of the molecules of metal into a crystalline form under continued shocks. This is often the cause of the breaking of the axles and springs of a motor car.

Cup, Priming: A small cup-shaped device provided with a cock, by which a small quantity of gasoline can be introduced into the cylinder of a gasoline engine.

Current: The rate of flow of electricity; the quantity of electricity which passes per second through a conductor or circuit.

Current Breaker: See "Contact Breaker".

Current Indicator: A device to indicate the direction of current flow in a circuit; a polarity indicator.

Current Rectifier: A device for converting alternating current into direct current. See "Converter".

Cushion Tire: See "Tire, Cushion".

Cut-Off, Gas Engine: That point in the cycle of an internal-combustion engine at which the admission of the mixture is discontinued by the closing of the admission valve.

Cut-Off, Steam Engine: That point in the cycle of a steam engine, or that point on an indicator diagram, at which the admission of steam is discontinued by the closing of the admission valve.

Cut-Out, Automatic: A device in a battery charging circuit designed to disconnect the battery from the circuit when the current is not of the proper voltage.

Cut-Out, Muffler: A device by which the engine is made to exhaust into the air instead of into the muffler.

Cut-Out Pedal: Pedal by means of which the engine is made to exhaust into the air instead of into the muffler.

Cycle: A complete series of operations beginning with the drawing in of the working gas, and ending after the discharge of the spent gas.

Cycle, Beau de Rochas: See "Beau de Rochas Cycle".

Cylinder: A part of a reciprocating engine consisting of a cylindrical chamber in which a gas is allowed to expand and move a piston connected to a crank.

Cylinder Bore: See "Bore".

Cylinder Cock: A small cock used to allow the condensed water to be drained away from the cylinder of a steam engine, usually called a *drain cock.*

Cylinder Head: That portion of a cylinder which closes one end.

Cylinder Jacket: See "Jacket, Water".

Cylinder Oil: Lubricant particularly adapted to the lubrication of cylinder walls and pistons of engines.

D

Dash: The upright partition of a car in front of the front seat and just behind the bonnet.

Dash Adjustment: Connections by which a motor auxiliary may be adjusted by a handle on the dash. Usually applied to carbureter adjustments.

Dash Coil: An induction coil for jump-spark ignition, having an element for each cylinder, with dash connections to the commutator on the engine or camshaft.

Dash Gage: A steam, water, oil, or electric gage placed upon the dash of the car.

Day Type of Engine: The two-cycle internal-combustion engine with an air-tight crankcase.

Dead Axle: See "Axle, Dead".

Dead Center: The position of the crank and connecting rod in which they are in the same straight line. There are two positions, and in these positions no rotation of the crankshaft is caused by pressure on the piston.

Decarbonizer: See "Carbon Remover".

Deflate: Reduction of pressure of air in a pneumatic tire.

Deflector: In a two-cycle engine, the curved plate on the piston head designed to cause the incoming charge to force out the exhaust gases and thus assist in scavenging.

Deflocculated Graphite: Graphite so finely divided that it remains in suspension in a liquid.

Demountable Rim: A rim upon which a spare tire may be mounted and carried, and so arranged that it may be easily and quickly taken off or put on the wheel.

Denatured Alcohol: See "Alcohol, Denatured".

Densimeter: See "Hydrometer".

Depolarizer: Material surrounding the negative element of a primary cell to absorb the gas which would otherwise cause polarizing.

Detachable Body: A body which may be detached from and placed upon the chassis.

Detachable Rim: See "Demountable Rim".

Diagram Indicator: See "Indicator Card".

Diagram, Jeantaud: A diagrammatic representation of the running gear of an automobile, showing it turning corners of various radii for the purpose of determining the front-axle and steering connections.

Diesel Gas Engine: Four-cycle internal-combustion engine in which the explosion of the charge is accomplished entirely by the temperature produced by the high compression of the mixture.

Differential, Bevel-Gear: A balance gear in which the equalizing action is obtained by means of bevel gears.

Differential, Spur-Gear: A differential gear in which the equalizing action is obtained by spur gears.

Differential Brake: See "Brake, Differential".

Differential Case: See "Differential Housing".

Differential Gear: A mechanism to permit driving the wheels and yet allow them to turn a corner without slipping. An arrangement such that the driving wheels may turn independently of each other on a divided axle, both wheels being under the control of the driving mechanism. Sometimes called *balance, compensating,* or *equalizing gear.*

Differential Housing: The case that encloses the differential gear.

Differential Lock: A device which prevents the operation of the differential gear, so that the wheels turn as if they were on a solid shaft.

Dimmer: An arrangement for lowering the intensity of, or reducing the glare from headlights.

Direct Current: A current which does not change its direction of flow, as the current from a battery or a direct-current generator. Distinguished from an alternating current, which reverses its direction many times a minute.

Direct Drive: Transmission of power from engine to the final driving mechanism at crankshaft speed.

Discharge: In a storage battery, the passage of a current of electricity stored therein. In the ignition circuit, the flow of high-tension current at the spark gap.

Disk Clutch: A clutch in which the power is transmitted by a number of thin plates pressed face to face.

Distance Rod: See "Radius Rod".

Distribution Shaft: See "Camshaft".

Distributor: That part of the ignition system which directs the high-tension current, to the respective spark plugs in the proper firing order.

Double Ignition: A method of ignition which comprises two separate systems, either of which may be used independently of the other, or both together as desired. Usually distinguished by two current sources and two sets of plugs.

Drag: That action of a clutch or brake which does not completely release.

Drag Link: That rod in a steering gear which forms the connection between the mechanism mounted on the frame and the axle stub, and transmits the movements of steering from steering post to wheels.

Drive Shaft: The shaft transmitting the motion from the change gears to the driving axle, the torsion rod.

Driving Axle: The axle of a motor car through which the power is transmitted to the wheels.

Driving Wheel: The wheel to which or by which the motion is transmitted.

Dry Battery: A battery of one or more dry cells.

Dry Cell: A primary voltaic cell in which a moist material is used in place of the ordinary fluid electrolyte.

Dual Ignition: An ignition system comprising two sources of current and one set of spark plugs.

Dust Cap: A metal cap to be screwed over a tire valve to protect the latter from dust and water.

Dynamo: The name frequently applied to a dynamo-electric machine used as a generator. Strictly, the term *dynamo* should be applied to both motor and generator.

Dynamometer: The form of equalizing gear attached to a source of power or a piece of machinery to ascertain the power necessary to operate the machinery at a given rate of speed and under a given load.

E

Earth: See "Ground".

Economizer, Gas: An appliance to be attached to a float-feed carbureter to improve the mixture by automatically governing the amount of air in the float chamber.

Eccentric: A disk mounted off-center on a shaft to convert rotary into reciprocating motion.

Economy, Fuel: The fuel economy of a motor is the relation between the heat units

in the fuel used in the motor and the work or energy given out by the motor.

Efficiency: The proportion of power obtained from a mechanism as compared with that put into it.

Efficiency of a Motor: The efficiency of a gasoline motor is the relation between the heat units consumed by the motor and the work of energy in foot-pounds given out by it. Electrical efficiency of a motor is the relation between the electrical energy put into the motor and the mechanical energy given out by it.

Ejector: An apparatus by which a jet of steam propels a stream of water in almost the same way as an injector, except that the ejector delivers it into a vessel having but little pressure in it.

Electric Generator: A dynamo-electric machine in which mechanical energy is transformed into electrical energy; usually called *dynamo*.

Electric Horn: An automobile horn electrically operated.

Electric Motor: A dynamo-electric machine in which electrical energy is transformed into mechanical energy.

Electric Vehicle: An automobile propelled by an electric motor, for which current is supplied by a storage battery carried in the vehicle.

Electrolyte: A compound which can be decomposed by electric current. In referring to storage batteries, the term electrolyte means the solution of sulphuric acid in water in which the positive and negative plates are immersed.

Electromagnet: A temporary magnet which obtains its magnetic properties by the action of an electric current around it and which is a magnet only as long as such current is flowing.

Electromotive Force: A tendency to cause a current of electricity to flow, usually synonymous with *potential, difference of potential, voltage*, etc.

Element: The dissimilar substances in a battery between which an electromotive force is set up, as the plates of a storage battery.

Emergency Brake: A brake to be applied when a quick stop is necessary; usually operated by a pedal or lever.

En Bloc: That method of casting the cylinders of a gasoline engine in which all the cylinders are made as a single casting. Block casting; monoblock casting.

End Play: Motion of a shaft along its axis.

Engine, Alcohol: An internal-combustion engine in which a mixture of alcohol and air is used as fuel.

Engine, Gasoline: An internal-combustion motor in which a mixture of gasoline and air is used as fuel.

Engine, Kerosene: An internal-combustion engine in which a mixture of kerosene and air is used as fuel.

Engine, Steam: An engine in which the energy in steam is used to do work by moving the piston in a cylinder.

Engine Primer: A small pump to force fuel into the carbureter.

Engine Starter: An apparatus by which a gasoline engine may be started in its cycle of operations without use of the starting crank. It belongs usually to one of four classes: (1) Mechanical or spring actuated, such as a coil spring wound up by the running of the engine or a strap around the flywheel; (2) fluid pressure, such as compressed air or exhaust gases induced into the cylinder to drive the piston through one cycle; (3) the electric system, in which a small motor is used to turn the engine over; (4) combinations of these.

Epicyclic Gear: See "Planetary Gear".

Equalizing Gear: See "Differential Gear".

Exhaust: The gases emitted from a cylinder after they have expanded and given up their energy to the piston; the emission of the exhaust gases.

Exhaust, Auxiliary: See "Auxiliary Exhaust".

Exhaust Horn: An automobile horn in which the sound is produced by the exhaust gases.

Exhaust Lap: The extension of the inside edges of a slide valve to give earlier closing of the exhaust. Also called *inside lap*.

Exhaust Manifold: A large pipe into which the exhaust passages from all the cylinders open.

Exhaust Port: The opening through which the exhaust gases are permitted to escape from the cylinder.

Exhaust Steam: Steam which has given up its energy in the cylinder and is allowed to escape.

Exhaust Stroke: The stroke of an internal-combustion motor during which the burned gases are expelled from the cylinder.

Exhaust Valve: A valve in the cylinder of an engine through which the exhaust gases are expelled.

Expanding Clutch: A clutch in which a split pulley is expanded to press on the inner circumference of a ring which surrounds it, and thus transmits motion to the ring.

Expansion, Gas Engine: That part of the cycle of a gas engine immediately after ignition, in which the gas expands and drives the piston forward.

Expansion, Steam Engine: That portion of the stroke of the steam engine in which the steam is cut off by the valves and continues to perform work on the piston, increasing in volume and decreasing in pressure.

Explosive Motor: See "Internal-Combustion Motor".

F

Fan, Cooling: A mechanically operated fan for producing a current of air for cooling the radiator or cylinder of a gas engine.

Fan, Radiator: A mechanically operated rotary fan used to induce the flow of air through the radiator to facilitate the cooling of the water.

Fan Belt: The belt which drives the cooling fan.

Fan Pulley: A pulley permanently attached to the fan and over which the fan belt runs to drive it.

Fat Spark: A short, thick, ignition spark.

Feed Pump: A pump by which water is delivered from the tank to the boiler of a steam car.

Feed Regulator: A device to maintain a uniform water level in a steam boiler by controlling the speed of the feed pump.

Feed-Water Heater: An apparatus for heating the boiler-feed water, either by means of a jet of steam or steam-heated coils.

Fender: A mud guard or shield over the wheels of a car.

Field, Magnetic: Space in the neighborhood of the poles of a magnet in which the magnetism exerts influence. Field also refers to the coils which produce the magnetism in an electromagnet.

Fierce Clutch: A clutch which cannot be engaged easily. A grabbing clutch.

Filler Board: Woodwork shaped to fill the space between the lower edge of the windshield and the dash.

Fin: Projections cast on the cylinders of a gas engine to assist in cooling.

Final Drive: That part of a car by which the driving effort is transmitted from the parts of the transmission carried on the frame to the transmission parts on the rear axle. The propeller shaft in a shaft-drive car.

Fire Test: A test of a lubricant to determine the temperature at which it will burn.

Firing: (1) Ignition of the charge in a gas engine. (2) The act of furnishing fuel under the boiler of a steam engine.

First Speed: That combination of transmission gears which gives the lowest gear ration forward. Slow speed; low speed.

Flash Boiler: A boiler arranged to generate highly superheated steam almost instantaneously, by allowing water to come in contact with very hot metal surfaces.

Flash Generator: See "Flash Boiler".

Flash Point: The temperature at which an oil will give off a vapor that will ignite when a flame comes in contact with it.

Flash Test: A test to determine the flash point of oils.

Flexibility: In an engine the ability to do useful work through a range of speeds.

Flexible Coupling: See "Universal Joint".

Flexible Shaft: A pliant shaft which will transmit considerable power when revolving.

Flexible Tubing: A tube for the conduction of liquids or gases, which may be bent at a small radius without leaking.

Float Carbureter: A carbureter for gasoline engines in which a float of cork or hollow metal controls the height of the liquid in the atomizing nozzle. Sometimes called *float-feed carbureter*.

Float Valve: An automatic valve by which the admission of a liquid into a tank is controlled through a lever attached to a hollow sphere which floats on the surface of the liquid and opens or closes the valve according as it is high or low.

Floating Axle: See "Axle, Floating".

Floating the Battery on the Line: Charging the battery while it is giving out current.

Flooding: Excessive escape of fuel in a carbureter from the spraying nozzle.

Flushing Pin: In a float-feed carbureter, a pin arranged to depress the float in priming. Also called *primer* and *tickler*.

Flywheel: A wheel upon the shaft of an engine which, by virtue of its moving mass, stores up the energy of the gas transmitted to the flywheel during the impulse stroke and delivers it during the rest of the cycle, thus producing a fairly constant torque.

Flywheel Marking: Marks on the face of a flywheel to indicate the time of valve opening and closing and thus assist in valve setting.

Foaming: See "Priming".

Fore Carriage: A self-propelled vehicle in which the motor is carried on the forward trucks, and propelling and steering is done with the forward trucks.

Fore-Door Body: An automobile body having doors in the forward compartment.

Four-Cycle or Four-Stroke Cycle: The cycle of operations in gas engines occupying two complete revolutions or four strokes.

Four-Wheel Drive: Transmission of driving effort to all four wheels.

Fourth Speed: That combination of transmission gears which gives the fourth from the lowest gear ratio forward. Usually the highest speed.

Frame: The main structural part of a chassis. It is carried upon the axles by the springs and carries the different elements of the car.

Frame Hangers: See "Body Hangers".

Free Wheel: A wheel so arranged that it can rotate more rapidly than the mechanism which drives it.

Friction: The resistance existing between two bodies in contact which tends to prevent their motion on each other.

Friction Clutch: A device for coupling and disengaging two pieces of shafting while in motion, by the friction of cones or plates on one another.

Friction Disk: The thin plate used in a disk or friction clutch. See "Disk Clutch".

Friction Drive: A method of transmitting power or motion by frictional contact.

Fuel: A combustible substance by whose combustion power is produced. Gasoline and kerosene are the chief automobile fuels.

Fuel Economy. See "Economy, Fuel".

Fuel Feed, Gravity: See "Gravity Fuel Feed".

Fuel Feed, Pressure: See "Lubrication, Force-Feed."

Fuel Feed, Vacuum. See "Vacuum Fuel Feed".

Fuel-Feed Regulator: A device in the fuel system of steam motor by which the rate of flow of fuel to the burner is automatically regulated.

Fuel Level: The height of the top of the fuel in the float chamber of a carbureter.

Fuel-Level Indicator: An instrument either permanently connected to the fuel tank or which may be inserted thereon to indicate the quantity of fuel in the tank.

Fuel Tank, Auxiliary: A tank designed to hold a supply of fuel in addition to that carried in the main shaft.

Fuse: A length of wire in an electric circuit designed to melt and open the circuit when excess current flows through it and thus prevent damage to other portions of the circuit.

Fusible Plug: A hollow plug filled with an alloy which melts at a point slightly above the temperature of the steam in a boiler, as when the water runs low, thus putting out the fire and preventing the burning out of the boiler.

G

Gage: (1) Strictly speaking, a measure of, or instrument for determining dimensions or capacity. Practically, the term refers to an instrument for indicating the pressure or level of liquids, etc. (2) The distance between the forward or rear wheels measured at the points of contact of the tires on the road. Tread; track.

Gage Cock: A small cock by which a pipe leading to a gage may be opened or closed.

Gage Lamp: Lamp, usually electric, placed above or near the gages to enable them to be read at night.

Gage, Oil: See "Oil Gage".

Gage, Tire: See "Tire-Pressure Gage".

Gap: In automobiles, the spark gap.

Garage: A building for storing and caring for automobiles.

Garage, Portable: A garage which may be moved from one place to another either as a whole or in sections.

Gas: Matter in a fluid form which is elastic and has a tendency to expand indefinitely with reduction in pressure.

Gas Economizer: See "Economizer".

Gas Engine: An internal-combustion motor in which a mixture of gas and air is used as fuel. The term is also applied to the gasoline engine.

Gas Engine, Otto: A four-stroke cycle engine developed by Otto and using the hot-tube method of ignition.

Gas Generator: An apparatus in which a gas is generated for any use.

Gas Lamp: See "Acetylene Lamp".

Gases, Boyle's Law of: See "Boyle's Law of Gases".

Gases, Gay Lussac's Law of: Called *Charles's Law* and the *Second Law of Gases*. Law defining the physical properties of gases at constantly maintained pressure. It states that at constant pressure the volume of gas varies with the temperature, the increase being in proportion to the change of temperature and volume of the gas.

Gasket: A thin sheet of packing material or metal used in making joints, piping, etc.

Gasoline: A highly volatile fluid petroleum distillate; a mixture of fluid hydrocarbons.

Gasoline-Electric Transmission: A system of propulsion in which a gasoline engine drives an electric generator, and the power is transmitted electrically to motors which drive the wheels.

Gasoline Engine: An internal-combustion motor in which a mixture of gasoline and air is used as a fuel.

Gasoline Primer: The valve on the carbureter of a gasoline engine by which the action of the engine can be started.

Gasoline-Tank Gage: A fuel-lever indicator for gasoline.

Gasoline Tester: A hydrometer graduated to indicate the specific gravity of gasoline, usually in degrees Baumé.

Gate: A plate which guides the gearshift lever in making speed changes.

Gather: Convergence of the forward portions of the front wheels. Toeing in.

Gay Lussac's Law of Gases: See "Gases, Gay Lussac's Law of".

Gear, Balance: See "Differential Gear".

Gear, Bevel: See "Bevel Gear".

Gear, Change-Speed: An arrangement of gear wheels which transmits the power of the motor to the differential gear at variable speeds independently of the motor speed.

Gear, Differential: See "Differential".

Gear, Fiber: A gear cut from a vulcanized fiber blank.

Gear, Helical: A gear whose teeth are not parallel to the axis of the cylinders.

Gear, Internal: A gear whose teeth project inward toward the center from the circumference of gear wheel.

Gear, Planetary: See "Planetary Gears".

Gear, Progressive: See "Progressive Change-Speed Gears".

Gear, Rawhide: A gear cut from a blank made up of compressed rawhide.

Gear, Selective: See "Selective Change-Speed Gears".

Gear, Timing: See "Timing Gears".

Gear, Worm: A helical gear designed for transmitting motion at angles, usually at right angles and with a comparatively great speed reduction.

Gearbox: The case covering the change-speed gears.

Gear Shifting: Varying the speed ration between motor and rear wheels by operating the change-speed gears.

Gear-Shift Lever: A lever by which the change-speed gears are shifted.

Geared-Up Speed: A speed obtained by an arrangement of gears in the gearset such that the propeller shaft rotates more rapidly than the crankshaft.

Gearset: See "Gear, Change-Speed".

Generator, Acetylene: See "Acetylene Generator".

Generator, Electric: See "Electric Generator".

Generator, Steam: A steam boiler.

Generator Tubing: Tubing by which acetylene is conducted from the generator to the lamp.

Gimbal Joint: A form of universal joint.

Gong: A loud, clear sounding bell, usually operated either electrically or by foot power

Governor: A device for automatically regulating the speed of an engine.

Governor, Dynamo: A method of automatic control of the generator (usually an ignition generator, in automobile work) by which its speed is maintained approximately constant.

Governor, Hydraulic: A governor applied to engines cooled by a pump circulation of water in such a way that the throttle opening is controlled by the pressure of the water.

Governor, Spark: A method of automatically controlling the speed of the engine by varying the time of ignition. See "Governor".

Grabbing Clutch: See "Fierce Clutch".

Gradometer: An instrument for indicating the degree of the gradient or the per cent of the grade. It consists of a level with a graduated scale.

Graphite: One of the forms in which carbon occurs in matter. Also known as *black lead*

and *plumbago.* Used as a lubricant in powdered or flake form in the cylinders of explosive engines.

Gravity-Feed Oiling System: See "Lubrication, Gravity".

Gravity Fuel Feed: Supply of fuel to the carbureter from the tank by force of gravity.

Grease and Oil Gun: A syringe by means of which grease or oil may be introduced into the bearings of the machinery.

Grease Cup: A device designed to feed grease to a bearing by the compression of a hand screw.

Grid: A lead plate formed in the shape of a gridiron to sustain and act as a conductor of electricity for the active material in a storage battery.

Grinding Valves: See "Valve Grinding".

Gripping Clutch: See "Fierce Clutch".

Ground: An electric connection with the earth, or to the framework of a machine.

H

Half-Motion Shaft: See "Half-Time Shaft".

Half-Time Gear: See "Timing Gears".

Half-Time Shaft: The cam shaft of a four-cycle gas engine. It revolves at one-half the speed of the crankshaft.

Hammer Break: A make-and-break ignition system in which the spark is produced when the moving terminal strikes the stationary terminal like a hammer.

Header: A pipe from which two or more pipes branch. Manifold.

Heater, Automobile: A device for warming the interior of an automobile, usually electric, or by means of exhaust gases or jacket water.

High Gear: That combination of change-speed gears which gives the highest speed.

High-Tension Current: A current of high voltage, as the current induced in the secondary circuit of a spark coil.

High-Tension Ignition: Ignition by means of high-tension current.

High-Tension Magneto: A magneto which delivers high-tension current.

Honeycomb Radiator: A radiator consisting of many very thin tubes, giving it a cellular appearance.

Hood: (1) That part of the automobile body which covers the frame in front of the dash. The engine is usually under the hood. (2) The removable covering for the motor.

Hooke's Coupler: See "Universal Joint".

Horizontal Motor: A motor the center line of whose cylinder lies in a horizontal plane.

Horn, Automobile: A whistle or horn for giving warning of the approach of the automobile.

Horsepower: The rate of work or energy expended in a given time by a motor. One horsepower is the rate or energy expended in raising a weight of 350 pounds one foot in one second, or raising 33,000 pounds one foot in one minute.

Horsepower, Brake: The power delivered at the flywheel of an internal combustion engine as ascertained by a brake test.

Horsepower, Rated: The calculated power which may be expected to be delivered by a motor. In America the term usually refers to the horsepower as calculated by the S.A.E. formula.

Hot-Air Intake: The pipe or opening conveying heated air to the carburetor.

Hot-Head Ignition: The method of igniting the charge in a gas-engine cylinder by maintaining the head of the combustion chamber at a high temperature from the internal heat of combustion, as in the Diesel engine.

Hot-Tube Ignition: An ignition device formerly used for gas engines in which a closed metal tube is heated red-hot by a Bunsen flame. When the compressed gases in the cylinder are allowed to come in contact with this, ignition takes place.

Housing: A metallic covering for moving parts.

H.P.: (1) Abbreviation for *horsepower.* (2) Abbreviation for *high pressure.*

Hub Cap: A metal cap placed over the outer end of a wheel hub.

Hydrocarbons: Chemical combinations of carbon and hydrogen in varied proportions, usually distillates of petroleum, such as gasoline, kerosene, etc.

Hydrometer: An instrument by which the specific gravity or density of liquids may be ascertained.

Hydrometer Scale, Baumé's: An arbitrary measure of specific gravity.

I

I-Beam: Sometimes called *I-Section.* A structural piece having a cross section resembling the letter I. I-Beam front axle.

Igniter: An insulated contact plug without sparking points, used in make-and-break ignition with low-tension magneto.

Igniter, High-Speed: An igniter having a short spark coil for high-speed engines.

Igniter, Jump-Spark: A system of ignition in which is used a current of high pressure, which will jump across a gap in the high-pressure circuit, causing a spark at the gap.

Igniter, Lead of: Amount by which the ignition is advanced. See "Advanced Ignition".

Igniter, Primary: The apparatus in a primary circuit for making and breaking the circuit.

Igniter Spring: A spring to quickly break the circuit of a primary igniter.

Ignition, Advancing: See "Advanced Ignition".

Ignition, Battery: A system which gets its supply of current from a storage battery or dry cells. This system usually consists of a battery, a step-up coil, and a distributor for sending the current to the different spark plugs.

Ignition, Catalytic: Method of ignition for explosive motors based on the property of some metals, particularly spongy platinum, of becoming incandescent when in contact with coal gas or carbonized air.

Ignition, Double: See "Double Ignition".

Ignition, Dual: See "Dual Ignition".

Ignition, Fixed: Ignition in which the spark occurs at a given point in the cycle and cannot be changed from that point at the will of the operator except by retiming the ignition system. Fixed spark

Ignition, Generator: Ignition current which is furnished by a combination lighting generator and magneto. The generator is

fitted with an interrupter and distributor. Sometimes refers to system in which a generator charges a battery and the latter furnishes the ignition current in connection with a coil and distributor.

Ignition, High-Tension: Sometimes called jump-spark. Ignition which is effected by means of a high-tension or high-voltage current which is necessary to jump a gap in the spark plug.

Ignition, Hot-Head: See "Hot-Head Ignition".

Ignition, Jump-Spark: See "Ignition, High-Tension".

Ignition, Low-Tension: See "Ignition, Make-and-Break".

Ignition, Make-and-Break: A system in which the spark is produced by the breaking or interruption of a circuit, the break occurring in the combustion space of the cylinder. The current used is of low-voltage, hence the synonym, low-tension ignition.

Ignition, Magneto: Ignition produced by an electric generator, called a magneto, which is operated by the gas engine for which it furnishes current. Dynamo ignition. Generator ignition.

Ignition, Master Vibrator: A system which uses as many non-vibrator coils as there are cylinders, and one additional coil, called the master vibrator, for interrupting the primary circuit for all coils. The master vibrator also is used with vibrator coils in which the vibrators are short-circuited.

Ignition, Premature: Ignition occurring so far before the top dead center mark that the explosion occurs before the piston has reached upper dead center.

Ignition, Primary: An ignition system in which a low-tension current flows through a primary coil, the circuit being mechanically opened, allowing a high-tension spark to jump across the gap. See "Primary Coil".

Ignition, Retarding: Setting the spark of an internal-combustion motor so that the ignition will occur at a later part of the stroke.

Ignition, Self: Explosion of the combustible charge by heat other than that produced by the spark. Incandescent carbon will cause this. Motor overheating because of lack of water is another cause.

Ignition, Single: A system using but one source of current.

Ignition, Synchronized: Ignition by means of which the timing in each cylinder of a multicylinder engine is the same. In synchronized ignition the spark occurs at the same point in the cycle in each cylinder. This type of ignition is obtained with a magneto and is lacking in a multi-coil system using vibrator coils.

Ignition, Timing of: The adjustment of the ignition system so that ignition will take place at the desired part of the cycle.

Ignition, Two-Independent: See "Ignition, Double".

Ignition, Two-Point: A system comprising two ignition sources, or a double-distributor magneto, and two sets of spark plugs, both of which spark at the same time.

Ignition Distributor: See "Distributor."

Ignition Switch: A control or switch for turning the ignition current on and off voluntarily.

I. H. P.: Abbreviation for *indicated horsepower.*

Indicated Horsepower: (1) The horsepower developed by the fuel on the pistons, in contradistinction to brake horsepower. See "Horsepower, Brake". (2) The horsepower of an engine as ascertained from an indicator diagram.

Indicator: An instrument by which the working gas in an engine records its working pressure.

Indicator Card: A figure drawn by means of an indicator by the working gas in an engine. Also called *indicator diagram.*

Induction Stroke: The downstroke of a piston which causes a charge of mixture to be drawn into the cylinder.

Inflammation: The act or period of combustion of the mixture in the cylinder.

Inflate: To increase the pressure within a tire by forcing air into it.

Inflator, Mechanical Tire: A small power-driven air-pump for inflating the tire; either driven by gearing, chain, or belt from the engine shaft, or by friction from the flywheel.

Inherent Regulation: Expression applied to electric generators which use no outside means of regulating the output, the regulation being affected by various windings of the armature and fields.

Initial Air Inlet: See "Primary Air Inlet".

Initial Pressure: Pressure in a cylinder after the charge has been drawn in but not compressed.

Injector: A boiler-feeding device in which the momentum of a steam jet, directed by a series of conical nozzles, carries a stream of water into the boiler, the steam condensing within and heating the water which it forces along.

Inlet, Valve: The valve which controls the inlet port and so allows or prevents mixture from passing to the cylinder.

Inlet Port: Passage or entrance in the cylinder wall through which the fuel mixture is taken. Sometimes called intake port.

Inlet Manifold: Sometimes called intake manifold or header. A branched pipe connected to the mixing chamber at one end and at the branch ends to the cylinders so as to communicate with the inlet ports.

Inlet Manifold, Integral: A manifold or header cast integral with the cylinder.

Inner-Tire Shoe: A piece of leather or rubber placed within the tire to protect the inner tube.

Inner Tube: A soft air-tight tube of nearly pure rubber, which fits within a felloe upon the casing.

Inside Lap: See "Exhaust Lap".

Intake Manifold: The large pipe which supplies the smaller intake pipes from each cylinder of a gas engine.

Intake Pipe: Sometimes made synonymous with inlet manifold. Correctly, the pipe from the carbureter to the inlet manifold.

Intake Stroke: See "Induction Stroke".

Intensifier: See "Outside Spark Gap".

Intermediate Gear: A gear in a change-speed set between high and low. In a three-speed set it would be second speed. In a four, either second or third.

GLOSSARY

Intermediate Shaft: See "Shaft, Intermediate".

Internal-Combustion Motor: Any prime mover in which the energy is obtained by the combustion of the fuel within the cylinder.

Internal Gear: See "Gear, Internal".

Interrupter: See "Vibrator".

J

Jack: A mechanism by which a small force exerted over a comparatively large distance is enabled to raise a heavy body. Used for raising the automobile axle to remove the weight from the wheels.

Jacket, Water: A portion of the cylinder casting through which water flows to cool the cylinder.

Jacket Water: The cooling water circulating in a water-cooling system.

Jackshaft: Shaft used in double-chain drive vehicles. Shaft placed transversely in the frame and driving from its ends chains which turn the rear wheels mounted on a dead axle.

Jeantaud Diagram: See "Diagram, Jeantaud".

Joint Knuckle: See "Swivel Joint."

Joule's Law of Gases: See "Gases, Joule's Law of".

Jump Spark: A spark produced by a secondary jump-spark coil.

Jump Spark, Circuit Maker: A mechanically operated switch by which the circuit in a jump-spark ignition system is opened and closed.

Jump-Spark Coil: An electrical transformer and interrupter, consisting of a primary winding of a few turns of coarse wire surrounding an iron core, and a secondary winding consisting of a great number of turns of very fine wire. The condenser is usually combined with this. Also known as *secondary spark coil.*

Jump-Spark Igniter: See "Igniter, Jump-Spark".

Jump-Spark Plug: See "Spark Plug".

Junction Box: A portion of an electric-lighting system to which all wires are carried for the making of proper connections.

Junk Ring: A packing ring used in sleeve-valve motors. It has the same functions as a piston ring. See "Piston Ring".

K

Kerosene: A petroleum product having a specific gravity between 58° and 40° Baumé. It is used as a fuel in internal-combustion engines and can often be used in gasoline engines by starting the engine on gasoline, then switching to kerosene.

Kerosene Burner: A burner especially adapted to use kerosene as a fuel.

Kerosene Engine: An engine using kerosene as fuel.

Key: A semicircular or oblong piece of metal used to hold a member firmly on a revolving shaft so as to prevent the member from rotating.

Key, Baldwin: A key with an oblong section.

Key, Woodruff: A key with a semicircular section.

Keyway: Slot in a rotating member used to hold the key

Kick Switch: Ignition switch mounted so that the driver can operate it with the foot.

Kilowatt: An electrical unit equal to 1000 watts.

Knuckle Joint: See "Swivel Joint".

L

Labor: The jerky operation of an engine. The engine is said to labor when it cannot pull its load without misfiring or jerking.

Lag, Combustion: The time between the instant of the spark occurrence and the explosion.

Lag, Ignition: The time between the instant of spark occurrence and the time at which the spark mechanism producing it begins to act.

Lamp, Trouble: Sometimes called inspection lamp. A small electric bulb carried in a suitable housing, and attached to a long piece of lamp cord. Used for inspecting parts of the car.

Lamp Bulb: The incandescent bulb used in a lamp.

Lamp Bracket: A support for a lamp.

Lamp Lighter: An apparatus for lighting gas lamps by electricity. The lamps are usually so arranged that by pushing the button the gas is turned on and the spark made at the same time.

Landaulet: A type of car which may be used as an open or closed car The rear portion of the body may be folded down like a top.

Landaulet Body: An automobile body resembling a limousine body, but having a cover fitted to the back, which may be let down, leaving the back open. The top generally extends over the driver.

Lap: To make parts fit perfectly by operating them with an abrasive, such as ground glass, between the rubbing surfaces. To finish.

Lap of Steam Valves: In the slide valve of a steam engine, the amount by which the admission edges overlap the steam port when the valve is central with the cylinder case.

Layshaft: A countershaft or secondary shaft of a gearset operated by the main or shifter shaft.

Lead, or Lead Wire: Any wire carrying electricity.

Lead: In a steam engine the amount by which the steam port is opened when the piston is at the start of its stroke.

Lead Battery: See "Accumulator".

Lead of Igniter: See "Igniter, Lead of".

Lead of Valve: In an engine the amount by which the admission port is opened when the piston is at the beginning of the stroke; according as this is greater or less, the admission of working fluid is varied through several fractions of the stroke.

Lean Mixture: Fuel after leaving the carbureter, which contains too much air in proportion to the gasoline. Sometimes called thin mixture, rare mixture, or weak mixture.

Lever, Brake: See "Brake Lever."

Lever, Change-Speed: Lever by which the different combinations of change gears are made so as to vary the speed of the driving

wheels in relation to the speed of the engine; also called gearshift lever.

Lever, Spark: Lever by which the speed and power of the engine are controlled by adjusting the time of ignition.

Lever, Steering: See "Steering Lever".

Lever, Throttle: A lever by which the speed and power of the engine are controlled by adjusting the amount of mixture admitted to the cylinder.

Lever Lock: An arrangement for locking the gearshift lever in free position so that with the engine running the driving axle will not be driven.

Lift: The distance through which a poppet valve is moved in opening from fully-closed to fully-open position.

Lifting Jack: See "Jack".

Lighting Outfit, Electric: An outfit for electrically lighting an automobile. This usually consists of a dynamo, storage battery, and lamps and switchboard, with the necessary wiring and cut-outs.

Limousine Body: An enclosed automobile body having the front and sides with side doors. The top extends over the seat of the driver.

Liner: One or more pieces of metal placed between two parts so they may be adjusted by varying the thickness of the liner. Sometimes called a shim. Also refers to a tool used for lining up parts.

Liner, Laminated: A liner or shim made in a number of parts, the thickness being varied by removing or adding parts.

Lines of Force: See "Field, Magnetic".

Link Motion: In a steam engine, the name for the arrangement of eccentric rods, links, hangers, and rocking shafts by which the relative motion and position of the slide valves are changed at will, providing for varying rates of expansion of the steam and thus varying the speed for either forward or backward motion.

Live Axle: See "Axle, Live".

Lock, Auto Safety: A device arranged so that it is impossible to start the motor car except by the proper combination or key.

Lock Nut: A nut placed on a bolt immediately behind the main nut to keep the main nut from turning.

Lock Switch: A switch in the ignition circuit so arranged that it can not be thrown on except by the use of a key.

Lock Valve: A valve capable of being secured with lock and key.

Long-Stroke: A gas engine whose stroke is considerably greater than its bore.

Lost Motion: Sometimes called play or backlash. Looseness of space between two moving parts.

Louver: A slit or opening in the side of a hood or bonnet of a motor car. Used to allow air from the draft to escape. A ventilator.

Low Gear: The lowest speed gear. First speed in a change-speed set.

Low-Speed Adjustment: A carbureter adjustment which regulates the mixture when the motor is operating slowly, with little throttle opening.

Low-Speed Band: The brake or friction band which controls the low speed of a planetary change-speed set.

Low-Tension Current: A current of low voltage or pressure, such as is generated by dry cells, storage battery, or low-tension magneto.

Low-Tension Ignition: See "Ignition, Make-and-Break".

Low-Tension Magneto: A magneto which initially generates a current of low voltage.

Low-Tension Winding: The winding of a transformer or induction coil through which the primary or low-tension current flows.

Low Test: Gasoline which has a high density, thus giving a low reading on the Baumé scale. Low-grade gasoline.

Low-Water Alarm: An automatic arrangement by which notice is given that the water in the boiler is becoming too low for safety.

Lubricant: An oil or grease used to diminish friction in the working parts of machinery.

Lubrication: To supply to moving parts and their bearings grease, oil, or other lubricant for the purpose of lessening friction.

Lubrication, Circulating: A system in which the same oil is used over and over.

Lubrication, Constant-Level: A system in which the level in the crankcase is kept to a predetermined level by means of a pump.

Lubrication, Force-Feed: Method of lubricating the moving parts of an engine by forcing the oil to the points of application by means of a pump.

Lubrication, Gravity: Method of supplying oil to moving parts of an engine by having a reservoir at a certain height above the highest point to be lubricated and allowing the oil to flow to the points of application by gravity.

Lubrication, Non-Circulating: A system in which the same oil is used but once.

Lubrication, Pressure-Feed: See "Lubrication, Force-Feed".

Lubrication, Sight-Feed: System of lubrication in which the oil pipe to different points of application is led through a glass tube in plain sight; usually at a point on the dashboard.

Lubrication, Splash: Method of lubricating an engine by feeding oil to the crankcase and allowing the lower edge of the connecting rod to splash into it.

Lubricator: A device containing and supplying oil or grease in regular amounts to the working parts of the machine.

Lubricator, Force-Feed: A pump-like device which automatically forces oil to the moving parts.

M

Magnet: A piece of iron or steel which has the characteristic properties of being able to attract other pieces of iron and steel.

Magnet, Horseshoe: A magnet shaped like the letter U.

Magnet, Permanent: A magnet which when once charged retains its magnetism.

Magnetic Field: See "Field, Magnetic".

Magnetic Spark Plug: A spark plug used in a make-and-break system of ignition in which contact is obtained by means of a magnet.

Magneto: See "Ignition, Magneto".

GLOSSARY

Magneto: See "Magneto-Electric Generator".

Magneto, Double-Distributor: A magneto with two distributors feeding two sets of spark plugs, two in each cylinder and both sparking at once. See "Ignition, Two-Point."

Magneto, High-Tension: A magneto has two armature windings and requires no outside coil for the generation of high-tension current.

Magneto, Induction: A type of magneto in which the armature and fields are stationary and a rotator or spool-shaped piece of metal is used to break the lines of force.

Magneto, Low-Tension: See "Low-Tension Magneto".

Magneto, Rotating Armature: A magneto in which the armature winding revolves.

Magneto Bracket: A shelf or portion of the crankcase web used to support the magneto.

Magneto Coupling: A flexible joint which connects the magneto with a revolving motor shaft.

Magneto Distributor: See "Distributor".

Magneto-Electric Generator: A machine in which there are no field magnet coils, the magnetic field of the machine being due to the action of permanent steel magnets. Usually contracted to *magneto*.

Main Bearing: A bearing used for supporting the crankshaft.

Manifold: A main pipe or chamber into which or from which a number of smaller pipes lead to other chambers. See "Intake Manifold", "Exhaust Manifold", and "Inlet Manifold".

Manometer: A device for indicating either the velocity or the pressure of the water in the cooling system of a gasoline motor.

Master Vibrator: A single vibrator which interrupts the current to each of a set of several spark coils in order.

Mean Effective Pressure: The average pressure exerted upon a piston throughout its stroke.

M. E. P.: Abbreviation for *mean effective pressure.*

Mercury Arc Rectifier: A mercury vapor converter. See "Mercury Vapor Converter".

Mercury Vapor Converter: An apparatus for converting alternating current into direct current by means of a bubble of mercury in a vacuum. The vapor of mercury possesses the property of allowing the flow of current in one direction only. Its principal use is for charging storage batteries.

Mesh: Two gears whose teeth are so positioned that one gear will drive the other are said to be in mesh.

Misfire: Failure of the mixture to ignite in the cylinder; usually due to poor ignition or poor mixtures.

Miss: The failure of a gas engine to explode in one or more cylinders. Sometimes called misfiring.

Mixing Chamber: A pipe or chamber placed between the carbureter and inlet manifold. Sometimes integral with the carbureter or manifold.

Mixing Tube: A tubular carbureter for a gas or gasoline engine.

Mixing Valve: A device through which air and gas are admitted to form an explosive mixture. The carbureter of a gasoline engine combines the mixing valve and vaporizer.

Mixture: The fuel of a gas engine, consisting of sprayed gasoline mixed with air.

Monobloc: Cast *en bloc* or in one piece. Refers usually to cylinders, which are cast two or more at once.

Motocycle: A trade name for a special make of motorcycle.

Motor, Electric: See "Electric Motor".

Motor, Gasoline: See "Gasoline Motor".

Motor, High-Speed: A gas engine whose rotative speed is very high and whose power output goes up with the speed to an unusual degree.

Motor, Horizontal: A gas engine whose cylinder axis lies in a horizontal plane.

Motor, I-head: A gas engine which has cylinders, a section of which resembles the letter I. This type has the valves in the head.

Motor, L-Head: A gas engine in which a section of cylinders resembles the letter L. The valves in this type are all on one side.

Motor, Long-Stroke: See "Long-Stroke Motor".

Motor, Non-Poppet: A gas engine whose valves are not of the poppet type. In this class is the Knight sleeve valve, the rotary valve, and the piston valve.

Motor, Overhead Valve: A motor with cylinders whose valves are in the head.

Motor, Piston Valve: A gas engine using valves which are in the form of pistons.

Motor, Poppet: A gas engine using poppet-type valves. See "Poppet Valve".

Motor, Revolving Cylinder: A motor whose cylinders revolve as a unit.

Motor, Rotary Valve: One in which the valves consist of slots cut out along cylindrical rods which rotate in the cylinder casting.

Motor, Sliding Sleeve: The Knight type motor in which thin sleeves slide up and down in the cylinder, the sleeves having ports which register with the inlet and exhaust manifolds.

Motor, T-Head: A gas engine with the valves on opposite sides of the cylinders, a section of which resembles the letter T.

Motor, V-Type: A motor whose cylinders are set on the crankcase so as to form an angle of 45 to 90 degrees between them.

Motor, Vertical: A motor with the cylinder axis in a vertical plane.

Motorcycle: A bicycle propelled by a gasoline engine.

Mud Guard: Metal or leather strips placed over the wheels to catch the flying mud and to prevent the clothing from coming in contact with the wheels when entering and leaving the car.

Muffler Cut-Out: See "Cut-Out, Muffler".

Muffler Cut-Out Pedal: See "Cut-Out Pedal".

Muffler Exhaust: A vessel containing partitions, usually perforated with small holes and designed to reduce the noise occasioned by the exhaust gases of an engine, by forcing the gases to expand gradually.

Muffler Explosion: Explosion of unburned gases in exhaust passages of the muffler, usually due to poor ignition or poor mixture.

Multiple Circuit: A compound circuit in which a number of separate sources or electrically operated devices, or both, have all their positive poles connected to a single positive conductor and all their negative poles to a single negative conductor.

N

N.A.A.M.: Abbreviation for National Association of Automobile Manufacturers.

Naphtha: A product of the distillation of petroleum used to some extent for marine engines.

Needle Valve: A valve in a carbureter used for regulating the amount of gasoline to flow in with the mixture.

Negative Plate: Plate of a storage battery to which current returns from the outside circuit.

Negative Pole: That pole of an electric source through which the current is assumed to enter or flow back into the source after having passed through the circuit external to the source.

Neutral Position: The position of the change-speed lever which so places the gears that the motor may run idle, the car remaining still.

Non-Deflatable Tire: See "Tire, Non-Puncturable".

Non-Freezing Solution: A solution placed into the radiator of a motor car to prevent the water therein from freezing. Alcohol and glycerine are the usual anti-freezing agents. See "Anti-Freezing Solution".

Non-Puncturable Tire: See "Tire, Non-Puncturable".

Non-Skid Device: See "Anti-Skid Device".

O

Odometer: (1) The mileage-recording mechanism of a speedometer. (2) An instrument to be attached to an automobile wheel to automatically indicate the distance traveled.

Odometer, Hub: A speed-recording device which is placed on the hub cap of a wheel.

Offset: Off center, as a crankshaft in which a line vertically through the crankpins does not coincide with a line vertically through the center of the cylinder.

Ohm: (1) Unit of electrical resistance. (2) Amount of electrical resistance. Such resistance as would limit the flow of electricity under an electromotive force of one volt to a current of one ampere.

Ohm's Law: The law which gives the relation between voltage, resistance, and current flow in any circuit. Expressed algebraically, $C = \frac{I}{R}$ where C is the current flowing in amperes, I the voltage and R the ohmic resistance.

Oil Burner: A burner equipped with an atomizer for breaking up liquid fuel into a spray.

Oil Engine: An internal-combustion motor using kerosene or other oil as fuel.

Oil Gage: (1) A gage to indicate the flow of oil in the lubricating system. (2) Used to show the level of oil in a compartment in the base of a gas engine.

Oil Gun: A cylinder with a long point and a spring plunger for squirting oil or grease into inaccessible parts of a machine.

Oil Pump: A small force pump providing a constant positive supply of oil under pressure; usually considered to be more reliable than a lubricator.

Oiler: An automobile device for oiling machinery.

Opposed Motor: A gasoline engine whose cylinders are arranged in pairs on opposite sides of the crankshaft, both connecting rods of each pair being connected to the same crank, so that the shock of the explosion in one will be balanced by the cushioning effect of the compression in the other. In general these motors are two-cylinder, horizontal.

Otto Cycle: See "Four-Stroke Cycle".

Outside Spark Gap: See "Spark Gap, Outside".

Overcharged: The state of the storage battery when it has been charged at too high a rate or for too great a length of time.

Overhead Camshaft: A camshaft which is placed above the cylinder of a gas engine.

Overhead Valves: See "Motor, Overhead Valve".

Overheating: The act of allowing the motor to reach an excessively high temperature due to the heat of combustion being not carried away rapidly enough by the cooling devices, or to insufficient lubrication. Overheating of a bearing is due to insufficient lubrication.

P

Packing: The material introduced between the parts of couplings, joints, or valves, to prevent the leakage of gas or liquids to or from them.

Panel, Charging: A small switchboard for charging a storage battery.

Parallel Circuit: See "Multiple Circuit".

Patch, Tire-Repair: Rubber strips for making repairs in punctured or ruptured tires.

Petcock: A control cock which when open allows gas or liquid to escape from the chamber to which it is attached.

Petrol: Word used in England for gasoline.

Picric Acid: Acid which may be added to gasoline to increase the motor efficiency. Gasoline will absorb about five per cent of its weight of picric acid.

Pin, Taper: A conically shaped pin.

Pinch: A cut in an inner tube caused by the tube being caught or pinched between the outer casing and the rim.

Pinion: (1) The smaller of any pair of gears. (2) A small gear made to run with a larger gear.

Piston: The hollow, cylindrical portion attached to the connecting rod of a motor. The reciprocating part which takes the strain caused by the explosion.

Piston Air Valve: A secondary air valve in the piston of earlier types of gas engines to compensate the imperfect operation of surface carbureters used with those engines and to secure the injection of a sufficient quantity of air to insure the combustion of the charge.

Piston Head: The top of the piston.

Piston Pin: A pin which holds the connecting rod to the piston.

Piston Ring: (1) A metal ring inserted in a groove cut into a piston assisting in making the latter tight in the cylinder. There are usually three rings on each piston. (2) Rings about the circumference of a piston, whose diameter is slightly greater than that of the piston. These are to insure closer fit and prevent wearing of the piston, as the wear is taken up by the rings which may be easily removed.

Piston Rod: Usually called connecting rod. The rod which connects the piston with the crankshaft.

Piston Skirt: The portion of a piston below the piston pin.

Piston Speed: The rate at which the piston travels in its cylinder.

Piston Stroke: The complete distance a piston travels in its cylinder.

Pitted: Condition of a working surface which has become covered with carbon particles which have been imbedded in the metal.

Planetary Gear: An arrangement of spur and annular gears in which the smaller gears revolve around the main shaft as planets revolve around the sun.

Planetary Transmission: A transmission system in which the speed changes are obtained by a set of planetary gears.

Plate: Part of a storage battery which holds active material. See "Negative Plate".

Pneumatic Tire: A tire fitted to the wheels of automobiles, consisting usually of two tubes, the outer of India rubber, canvas, and other resilient wear-resisting material, and the inner composed of nearly pure rubber which is inflated with compressed air to maintain the outer tube in its proper form under load.

Polarizing: Formation of gas at the negative element of a cell so as to prevent the action of the battery. This formation of gas is caused by the violent reaction taking place in a circuit of low resistance.

Pole Piece: A piece of iron attached to the pole of a magneto used in an electric generator.

Poppet Valve: A disk or drop valve usually seating itself through gravitation or by means of springs, and frequently opening by suction or cams.

Port: An opening for the passage of the working fluid in an engine.

Portable Garage: See "Garage, Portable".

Positive Connection: A connection by which positive motion is transmitted by means of a crank, bolt, or key, or other method by which slipping is eliminated.

Positive Motion: Motion transmitted by cranks or other methods in which slipping is eliminated.

Positive Plate: Plate in a storage battery, from which the current flows to the outside circuit.

Positive Pole: The source from which electricity is assumed to flow; the opposite of negative pole. In a magnet the positive pole is the end of the magnet from which the magnetic flux is assumed to emanate.

Pounding in Engine: Pounding noise at each revolution, usually caused by either carbon deposit, loose or tight piston, loose bearing or other part, or pre-ignition.

Power Stroke: The piston stroke in a gas engine in which the exploded gases are expanding, thus pushing the piston downward.

Power Tire Pump: A pump which is operated by a gas engine and is used to inflate the tires of a motor car.

Power Unit: The engine with fuel, cooling, lubrication, and ignition systems, without the transmission or running gears. Sometimes the gearset and driving shaft are included by the term.

Pre-Ignition: See "Premature Ignition".

Premature Ignition: Ignition of fuel before the proper point in the cycle.

Pressure-Feed: See "Lubrication, Force-Feed".

Pressure Gage: A gage for indicating the pressure of a fluid confined in a chamber, such as steam in a boiler, etc.

Pressure Lubricator: A lubricating device in which the oil is forced to the bearings by means of a pump or other device for maintaining pressure.

Pressure Regulator: A device for maintaining the pressure of the steam in the principal pipe at a constant point irrespective of the fluctuations of pressure in the boiler.

Primary Air Inlet: The main or fixed air intake of a carbureter.

Primary Circuit: The circuit which carries low-tension current.

Primary Coil: A self-induction coil consisting of several turns of wire about an iron core.

Primary Spark Coil: An induction coil which has only a single winding composed of a few layers of insulated copper wire wound on a bundle of soft iron wires, known as the *core*, also as a *wipe*, or *touch, spark coil*

Primer: A pin in a float-feed valve so arranged that it may depress the float in priming a gasoline engine. Also called *tickler* and *flushing pin*.

Priming: (1) The carrying of water over with the steam from the boiler to the engine, due to dirty water, irregular evaporation, or forced steaming. (2) Injecting a small amount of gasoline into the cylinder of a gasoline engine to assist in starting.

Priming Cock: A control cock screwed into the cylinder and which when open communicates with the combustion chamber allowing gasoline to be poured into the cylinder.

Progressive Change-Speed Gears: Change-speed gears so arranged that higher speeds are obtained by passing through all the intermediate steps and *vice versa*.

Prony Brake: A dynamometer to indicate the horsepower of an engine. A band encircles the flywheel of the engine and is secured to a lever, at the other end of which is a scale to measure the pull.

Propeller Shaft: The shaft which turns the rear axle of a motor car. The drive shaft.

Pump, Centrifugal: A pump with a hollow hub and curved blades which by centrifugal force throw water or oil into the system requiring it.

Pump, Circulation: See "Circulation Pump".

Pump, Fuel-Feed: A mechanically operated pump for insuring positive feed of fuel to the burner of a steam engine or carbureter of a gas engine.

Pump, Oil: See "Oil Pump".

Pump, Plunger: Sometimes called piston pump. One containing a piston which forces a liquid to a system.

Pump, Power Tire: See "Tire Pump".

Pump, Steam Boiler-Feed: See "Boiler-Feed Pump".

Pump, Water Circulating: See "Circulation Pump".

Pump Gear: A pump composed of two gears in mesh placed in a housing. When the gears revolve they carry oil or water, as the case may be, on their teeth, which deliver it to an outlet.

Puncture: The perforation of an inflated rubber automobile tire by some sharp substance on the roadbed.

Puncture-Closing Compound: A viscous compound placed within the inner tire tube to close the hole caused by a puncture.

Push Rod: A rod which operates the valves of a poppet-valve motor. A rod which imparts a pushing motion.

R

Race: (1) The parts upon which the balls of a ball bearing roll. (2) When referring to a gas engine, to operate at high speed without a load.

Racing Body: A low, light automobile body, having two seats with backs as low as possible; designed for large fuel capacity and very high speed.

Radiator: A device consisting of a large number of small tubes, through which the heated water from the jacket of the engine passes to be cooled, the heat being carried away from the metal of the radiator by air.

Radiator, Cellular: See "Honeycomb Radiator".

Radiator, Tubular: A radiator consisting of many tubes, through which water passes to be cooled.

Radiator Protector: See "Bumper".

Radius Rod: A bar in the frame of an automobile to assist in maintaining the proper distance between centers. Also called *distance rod.*

Rawhide Gear: Tooth gears, built up of compressed rawhide, used for high-speed drive. Sometimes a metal gear is merely faced with rawhide for the purpose of reducing noise.

Reach Rod: See "Radius Rod".

Reciprocating Parts: The parts such as pistons and connecting rods which have a reciprocating motion.

Rectifier, Alternating-Current: See "Current Rectifier".

Relief Cock: See "Compression-Relief Cock".

Removable Rim: See "Demountable Rim".

Resiliency: That property of a material by virtue of which it springs back or recoils on removal of pressure, as a spring.

Resistance, Electrical: (1) A part of an electric circuit for the purpose of opposing the flow of the current in the circuit. (2) The electrical resistance of a conductor is that quality of a conductor by virtue of which the conductor opposes the passage of electricity through its mass. Its unit is the *ohm.*

Retard: With reference to the ignition system, causing the spark to occur while the piston is retarding or moving downward on the working stroke.

Retarding Ignition: See "Ignition, Retarding".

Retarding the Spark: See "Ignition, Retarding".

Retread: To replace the tread of a pneumatic tire with a new one.

Reverse Cam: On a gasoline engine a cam so arranged that by reversing its motion or shifting it along its shaft it will operate the valves and cause the engine to reverse.

Reverse Gear: In a steam engine, a device by which the valves may be set to effect motion of the car in either direction. In a gasoline automobile, the reversing gear is usually incorporated with the change-speed gears.

Reverse Lever: A lever by which the direction of movement of the driving wheels may be reversed without reversing the engine. This is usually combined with the change-speed levers.

Rheostat: A device for regulating the flow of current in a closed electrical circuit by introducing a series of graduated resistances into the circuit.

Rim: The portion of a wheel to which a solid or pneumatic tire is fitted. A circular, channel-shaped portion attached to the wheel felloe.

Rim, Demountable: A rim which may be removed from the wheel easily in order that another with an inflated tire may take its place.

Rim, Quick-Detachable: A rim made of two or more parts so that the tire may be detached and attached quickly.

Rim, Removable: See "Demountable Rim".

Road Map: A map of a section or locality showing the best roads for motor-car travel, and usually the best stopping places and repair stations.

Roadster: A small motor car designed to be fairly speedy; usually has carrying capacity for an extra large quantity of fuel and supplies; generally seats two persons, with provision for one or two more, by the attachment of a rumble seat in the rear.

Rocker Arm: A pivoted lever used to operate overhead valves in a T-head motor.

Rod, Radius: See "Radius Rod".

Rod, Steering: See "Steering Rod".

Roller Bearings: See "Bearing, Roller".

Roller Chain: A chain whose links are provided with small rollers to decrease the friction and the noise.

Rotary Valve: A type of valve somewhat similar to the Corliss engine valve used on automobile motors.

Rumble: A small single seat to provide for an extra passenger on a two-seated vehicle. Usually detachable.

Runabout: A small two-seated vehicle, usually of a lower power and lower speed, as well as lower operating radius, than a roadster.

Running Board: A horizontal step placed below the frame and used to assist passengers in leaving and entering a motor car.

Running Gear: The frame, springs, motor, wheels, speed-change gears, axles, and machinery of an automobile, without the body; used synonymously with *chassis*.

S

Safety Plug: See "Fusible Plug".

Safety Valve: A valve seated on the top of a steam boiler, and loaded so that when the pressure of the steam exceeds a certain point the valve is lifted from the seat and allows the steam to escape.

Saturated Steam: The quality of the steam when no more steam can be made in the closed vessel without raising the temperature or lowering the pressure.

Scavenging: The action of clearing the cylinder of an internal-combustion motor of the burned-out gases.

Score: To burn, or abrade a moving part with another moving part.

Screw: An inclined plane wrapped around a cylinder; a cylinder having a helical groove cut in its surface.

Searchlight: A headlight designed to throw a very bright light on the road. Electricity or acetylene is usually used as an illuminant, and the lamp has a parabolic reflector and may be turned to throw the light in any direction.

Secondary Battery: See "Accumulator".

Secondary Current: A current in which the electromotive force is generated by induction from a primary circuit in which a variable current is flowing. The high-tension current of a jump-spark ignition system.

Secondary Circuit: The circuit which carries high-tension current.

Secondary Spark Coil: An induction coil having a double winding upon its core. The inner winding is composed of a few layers of insulated wire of large size, and the outer winding consists of a great many layers of very small insulated copper wire. Also known as a *jump-spark coil.*

Seize: Refers to moving parts which adhere because of operation without a film of oil between the working surfaces.

Selective Change-Speed Gears: Change-speed gears so arranged that any desired speed combination can be obtained without going through the intermediate steps.

Self-Firing: Ignition of the mixture in a gas engine due to the walls of the cylinder or particles attached to them becoming overheated and incandescent.

Self-Starter: See "Engine Starter".

Separator, Steam: A device attached to steam pipes to separate entrained water from live steam before it enters the engine, or to separate the oily particles from exhaust steam on its way to the condenser.

Series Circuit: A compound circuit in which the separate sources or the separate electrical receiving devices, or both, are so placed that the current supplied by each, or passed through each, passes successively through the other circuits from the first to the last.

Set Screw: A small screw with a pointed end used for locking a part in a fixed position to prevent it from turning.

Setting Valves: See "Valve Setting".

Shaft, Intermediate: The shaft placed between the first and third motion gearing and acting as a carrier of motion between the two.

Shaft Drive: System of power transmission by means of a shaft.

Shim: See "Liner".

Shock Absorber: A device attached to the springs or hangers of motor cars to decrease the jars due to rough roads, instead of allowing them to be transmitted to the frame of the carriage.

Short Circuit: A shunt or by-path of comparatively small resistance around a portion of an electric circuit, by which enough current passes through the new path to virtually cut out the part of the circuit around which it is passed, and prevent it from receiving any appreciable current.

Sight Feed: An indicator covered with glass which shows that oil is flowing in a system. A telltale sight. A check on the oiling system.

Side-Bar Steering: See "Steering, Side-Bar".

Side-Slipping: See "Skidding".

Silencer: See "Muffler, Exhaust".

Silent Chain: A form of driving chain in which the links are comprised of sections which so move over the sprocket that practically all noise is eliminated. Silent chains are used specially for driving timing gears, gearsets, etc.

Skidding: The tendency of the rear wheels to slide sideways to the direction of travel, owing to the slight adhesion between tires and the surface of the roadbed, also called *side-slipping.*

Skip: See "Miss".

Sleeve Valve: A form of valve consisting of cylindrical shells moving up and down in the cylinders of such a motor as the Silent Knight.

Sliding Gears: A change-speed set in which various gears are placed into mesh by the sliding on a shaft of one or more gears.

Sliding Sleeve: See "Motor, Sleeve-Valve".

Slip Cover: A fabric covering for the top when down or for the upholstery of a motor vehicle.

Smoke in Exhaust: Smoky appearance in the exhaust due to too much oil, too rich mixture, low grade of fuel, or faulty ignition.

Solid Tire: See "Tire, Solid".

Sooting of Spark Plug: Fouling of the spark plug with soot, due to poor mixture, impure fuel, or improper lubrication.

Spare Wheel: An extra wheel complete with inflated tire, carried on the car for quick replacement of wheel with damaged tire.

Spark, Advancing: See "Advanced Ignition".

Spark Coil: A coil or coils of wire for producing a spark at the spark plug. It may be either a secondary or primary spark coil.

Spark Gap: A break in the circuit of a jump-spark ignition system for producing a spark within the cylinder to ignite the charge. The spark gap is at the end of a small plug called the *spark plug.*

Spark Gap, Extra: See "Spark Gap, Outside".

Spark Gap, Outside: A device to overcome the short circuiting in the spark gap due to fouling and carbon deposits between the points of the high-tension spark plug. It is a form of condenser, or capacity in which the air acts as the dielectric between two surfaces at the terminals of a gap in a high-tension circuit.

Spark Intensifier: See "Spark Gap, Outside".

Spark Lever: See "Timing Lever".

Spark Plug: The terminals of the secondary circuit of a jump-spark ignition system mounted to leave a spark gap between the terminals projecting inside the cylinder for the purpose of igniting the fuel in the cylinder by means of a spark crossing the gap between them.

Spark Plug, Pocketing: Mounting the spark plug in a recess of the cylinder head to reduce the sooting of the sparking points.

Spark Plug, Sooting of: See "Sooting of Spark Plug".

Spark Regulator: A mechanism by which the time of ignition of the charge is varied by a small handle on or near the steering wheel.

Spark, Retarding: See "Ignition, Retarding".

Spark Timer: See "Timer, Ignition".

Speaking Tube: See "Annunciator".

Specific Gravity: The weight of a given substance relative to that of an equal bulk of some other substance which is taken as a standard of comparison. Air or hydrogen is the standard for gases, and water is the standard for liquids and solids.

Specific Heat: The capacity of a substance for removing heat as compared with that of another which is taken as a standard. The standard is generally water.

Speed-Change Gear: A device whereby the speed ratio of the engine and driving wheels of the car is varied.

Speed Indicator: An instrument for showing the velocity of the car.

Speedometer: A device used on motor cars for recording the miles traveled and for indicating the speed at all times.

Speedometer Gears: Gears used to drive a shaft which operates the speedometer.

Speedometer Shaft: A flexible shaft which operates a speedometer.

Spiral Gear: A gear with helically-cut teeth.

Splash Lubrication: See "Lubrication, Splash".

Spline: A key.

Spontaneous Ignition: See "Self-Firing".

Sprag: A device to be let down (usually at the rear of the car) to prevent its slipping back when climbing a hill.

Spray Nozzle: That portion of a carbureter which sprays the gasoline.

Spring: An elastic body, as a steel rod, plate, or coil, used to receive and impart power, regulate motion, or diminish concussion.

Spring, Cantilever: A type of spring which appears like a semi-elliptic reversed; and which is flexibly attached in the center, rigidly at one end, and by a shackle at the other.

Spring, Elliptic: A spring, elliptic in shape, and consisting of two half-elliptic members attached together.

Spring Semi-Elliptic: A spring made up of a number of leaves, the whole resembling a portion of an ellipse.

Spring, Supplementary: See "Shock Absorber".

Spring, Underslung: A spring which is fastened under the axle instead of over it.

Spring Hangers: See "Body Hangers".

Spring Shackle: A link attached to one end of a spring which allows for flattening of the spring.

Sprocket: A wheel with teeth around the circumference, so shaped that the teeth will fit into the links of a chain which drives or is driven by the sprocket.

Starboard: The right-hand side of a ship or vessel.

Starter, Engine: See "Engine Starter".

Starting, Gas Engine: The operation necessary to make the engine automatically continue its cycle of events. It usually consists of opening the throttle, retarding the spark, closing the ignition circuit, and cranking the engine.

Starting Crank: A crank by which the engine may be given several revolutions by hand in order to start it.

Starting Device: See "Engine Starter".

Starting on Spark: In engines having four or more cylinders with well-fitting pistons, it is often possible to start the motor after it has stood idle for some time by simply closing the ignition circuit, provided that the previous stopping of the engine was done by opening the ignition circuit before the throttle was closed, leaving an unexploded charge under compression in one of the cylinders.

Steam: The vapor of water; the hot invisible vapor given off by water at its boiling point.

Steam Boiler: See "Boiler".

Steam Condenser: See "Condenser".

Steam, Cycle of: A series of operations of steam forming a closed circuit, a fresh series beginning where another ends, that is, steam is generated in the boilers, passes through the pipes of the engine, doing work successively in its various cylinders, escaping at exhaust pressure to the condenser, where it is converted into water and returned to the boiler, to go through the same operations once more.

Steam Engine: A motor depending for its operation on the latent energy in steam.

Steam Gage: See "Pressure Gage".

Steam Port: See "Admission".

Steering, Side-Bar: Method of guiding the car by means of an upright bar at the side of the seat.

Steering Angle for Front Wheels: Maximum angle of front wheels to the axle when making a turn; should be about 35°.

Steering Check: A device for locking the steering gear so that the direction will not be changed unless desired.

Steering Column: See "Steering Post".

Steering Gear: The mechanism by which motion is communicated to the front axle of the vehicle, by which the wheels may be turned to guide the car as desired

Steering Knuckle: A knuckle connecting the steering rods with the front axle of the motor.

Steering Lever: A lever or handle by which the car is guided.

Steering Neck: The vertical spindle carried by the steering yoke. It is the pivot of the bell crank by which the wheel is turned.

Steering Pillar: See "Steering Post".

Steering Post: The member through which the twist of the steering wheel is transmitted to the steering knuckle. The steering post often carries the spark and throttle levers also.

Steering Rod: The rod which connects the steering gear with the bell cranks or pivot arms, by means of which the motor car is guided.

Steering Wheel: The wheel by which the driver of a motor car guides it.

Steering Yoke: The Y-shaped piece in which the front axle terminates. The yoke carries the vertical steering spindle or steering neck.

Stephenson Link Motion: A reversing gear in which the ends of the two eccentric rods are connected by a link or quadrant sliding over a block at the end of the valve spindle.

Step-Up Coil: A coil used to transform low- into high-tension current.

Storage Battery: See "Accumulator".

Stroke: See "Piston Stroke".

Strainer, Gasoline: A wire netting for preventing impurities entering the gasoline feed system.

Strangle Tube: The narrowing of the throat of the carbureter just above the air inlets in order to increase the speed of the air, and thus increase the proportion of gas which will be picked up.

Stroke: The distance of travel of a piston from its point of farthest travel at one end of the cylinder to its point of farthest travel at the other end. Two strokes of the piston take place to every revolution of the crankshaft.

Stud Plate: The plate or frame in a planetary transmission system carrying studs upon which the central pinions revolve.

Suction Valve: The type of admission valve on an internal combustion engine which is opened by the suction of the piston within the cylinder and admits the mixture. The valve is normally held to its seat by a spring.

Sulphating of Battery: The formation of an inactive coating of lead sulphate on the surface of the plates of a storage battery. It is a source of loss in the battery.

Superheated Steam: Steam which has been still further heated after reaching the point of saturation.

Supplementary Air Valve: See "Auxiliary Air Valve".

Swivel Joint: The joint for connecting the steering arm of the wheel or lever-steering mechanism to the arms on the steering wheel. Also called *knuckle joint.*

T

Tachometer: An instrument for indicating the number of revolutions made by a machine in a unit of time.

Tandem Engine: A compound engine having two or more cylinders in a line, one behind the other, and with pistons attached to the same piston rod.

Tank Gage: See "Fuel-Level Indicator".

Tappet Rod: See "Push Rod".

Taxicab: A public motor-driven vehicle in which the fare is automatically registered by the taximeter.

Taximeter: An instrument in a public vehicle for mechanically indicating the fare charged.

Terminals: The connecting posts of electrical devices, as batteries or coils.

Thermal Unit: Usually called the *British Thermal Unit,* or *B. t. u.* A measure of mechanical work equal to the energy required to raise one pound of water one degree Fahrenheit.

Thermostat: An instrument to automatically regulate the temperature.

Thermosiphon Cooling: A method of cooling the cylinder of a gas engine. The water rises from the jackets and siphons into a radiator from whence it returns to the supply tank, doing away with the necessity for a circulating pump.

Three-Point Suspension: A method used for suspending motor car units, such as the motor, on three points.

Throttle: A valve placed in the admission pipe between the carbureter and the admission valve of the motor to control the speed and power of the motor by varying the supply of the mixture.

Throttle, Foot: See "Accelerator".

Throttle, Lever: A lever on the steering wheel which operates the carbureter throttle. See "Throttle".

Throttling: The act of closing the admission pipe of the engine so that the gas or steam is admitted to the cylinder less rapidly, thus cutting down the speed and power of the engine.

Thrust Bearing: A bearing which takes loads parallel with the axis of rotation of the shaft upon which it is fitted.

Tickler: A pin in a carbureter arranged to hold down the float in priming, also called *flushing pin* and *primer.*

Timer, Ignition: An ignition commutator.

Timing Gears: The gears which operate the camshaft and magneto shaft The camshaft gear is twice as large as the crankshaft gear.

Timing Lever: A lever fitted to gas engines by means of which the time of ignition is changed. Also called *spark lever.*

Timing Valve: In a gas engine using float-tube ignition, a valve controlling the opening between the combustion space and the igniter.

Tip, Burner: A small earthen, aluminum, or platinum cover for the end of the burner tube of an acetylene lamp. It is usually provided with two holes, so placed that the jets from them meet and spread out in a fan shape.

Tire, Airless: See "Airless Tire".

Tire, Clincher: A type of pneumatic tire which is held to a clincher.

Tire, Cushion: Vehicle tire having a very thick rubber casing and very small air space. It is non-puncturable and does not have to be inflated, but is not as resilient as a pneumatic tire.

Tire, Non-Deflatable: See "Tire, Non-Puncturable".

Tire, Non Puncturable: A tire so constructed that it cannot be easily punctured or will not become deflated when punctured.

Tire, Punctures in: Holes or leaks in pneumatic tires caused by foreign substances penetrating the inner tube and allowing the air to escape.

Tire, Single-Tube: A pneumatic tire in which the inner and outer tubes are combined.

Tire, Solid: A tire made of solid, or nearly solid rubber.

Tire Band: A band to protect or repair a damaged pneumatic tire. See "Tire Protector".

Tire Bead: Lower edges of a pneumatic tire which grip the curved portion of a rim.

Tire Case: (1) A leather or metal case for carrying spare tire; same as *tire holder.* (2) The outer tube.

Tire Chain: See "Anti-Skid Device".

Tire Filling: Material to be introduced into the tire to take the place of air and do away with puncture troubles

Tire Gage: Gage used for measuring the air pressure in a pneumatic tire.

Tire Holder: A metal or leather case for carrying spare tires.

Tire-Inflating Tank: A tank containing compressed air or gas for inflating the tires.

Tire Inflater, Mechanical: A small mechanical pump for inflating pneumatic tires.

Tire Patch: See "Patch, Tire Repair".

Tire-Pressure Gage: A pressure gage to indicate the pressure of air in the tire.

Tire Protector: The sleeve or band placed over a tire to protect it from road wear.

Tire Pump: A pump for furnishing air under pressure to the tire, may be either hand- or power-operated.

Tire Sleeve: A sleeve to protect the injured part of a pneumatic tire. It is a tire protector which covers more of the circumference of the wheel than a tire band. See "Tire Protector".

Tire Tape: Adhesive tape used to bind the outer tube to the rim in repairing tires.

Tire Tool: Tool used to apply and remove a tire.

Tire Valve: A small valve in the inner tube to allow air to be pumped into the tube without permitting it to escape.

Tires, Creeping of: See "Creeping of Tires".

Tonneau: The rear seats of a motor car. Literally, the word means a round tank or water barrel.

Torque: Turning effort, or twisting effort of a rotating part.

Torque Rod: A rod attached at one end to the rear axle and at the other to the frame; used to prevent twisting of the rear-axle housing.

Torsion Rod: The shaft that transmits the turning impulse from the change gears to the rear axle. Usually spoken of as the *shaft.*

Touch Spark: See "Wipe Spark".

Tourabout: A light type of touring car.

Touring Car: A car with no removable rear seats, and a carrying capacity of four to seven persons.

Town Car: A car having the rear seats enclosed but the driver exposed.

Traction: The act of drawing or state of being drawn. The pull (or push) of wheels.

Tractor: A self propelled vehicle for hauling other vehicles or implements; a traction engine.

Transmission, Individual Clutch: A transmission consisting of a set of spur gears on parallel shafts which are always in mesh, different trains being picked up with a separate clutch for each set.

Transmission, Planetary: A transmission system in which a number of pinions revolve about a central pinion in a manner similar to the revolution of the planets about the sun; usual type consists of a central pinion surrounded by three or more pinions and an internal gear.

Transmission, Sliding Gear: A transmission system in which sliding change-speed gears are used.

Transmission Brake: Brake operating on the gearset shaft or end of the propeller shaft.

Transmission Gears: A set of gears by which power is transmitted. In automobiles, usually called *change-speed gears.*

Transmission Ratio: The ratio of the speed of the crankshaft to the speed of the transmission shaft or driving shaft.

Tread: That part of a wheel which comes in contact with the road.

Tread, Detachable: A tire covering to protect the outer tube, which may be taken off or replaced.

Trembler: The vibrating spring actuated by the induction coil magnet which rapidly connects and disconnects the primary circuit in connection with jump-spark ignition.

Truck: (1) A strong, comparatively slow-speed vehicle, designed for transporting heavy loads. (2) A swiveling carriage having small wheels, which may be placed under the wheels of a car.

Try Cock: A faucet or valve which may be opened by hand to ascertain the height of water in the boiler.

Tube Case: See "Tire Case".

Tube Ignition: See "Hot-Tube Ignition".

Tubing, Flexible: See "Flexible Tubing".

Tubular Radiator: An automobile radiator in which the jacket water circulates in a series of tubes.

Tungsten Lamp: Incandescent bulb with the filament made of tungsten wire.

Turning Moment: See "Torque".

Turning Radius: The radius of a circle which the wheels of a car describe in making its shortest turn.

Turntable: Device installed in the floor of a garage and used for turning motor cars around.

Two-Cycle or Two-Stroke Cycle Engine: An internal-combustion engine in which an impulse occurs at the beginning of every revolution, that is, at the beginning of every downward stroke of the piston.

Two-to-One Gear: The system of gearing in a four-cycle gas engine for driving the camshaft, which must revolve once to every two revolutions of the crankshaft.

U

Under Frame: The main frame of the chassis or running gear of a motor vehicle.

Unit-Power Plant: A power system consisting of a motor, gearset, and clutch which may be removed from the motor car as a unit.

Universal Joint: A mechanism for endwise connection of two shafts so that rotary motion may be transmitted when one shaft is at an angle with the other. Also called *universal coupling, flexible coupling, Cardan joint* and *Hooke's joint*.

Upkeep: The expenditure for maintenance or expenditure required to keep a vehicle in good condition and repair.

V

Vacuum Fuel Feed: A system of feeding the gasoline from a tank at the rear of an automobile by maintaining a partial vacuum at some point in the system, usually at the dash, the fuel flowing from this point by gravity to the carbureter.

Vacuum Line: In an indicator diagram, the line of absolute vacuum. It is at a distance corresponding to 14.7 pounds below the atmospheric line.

Valve: A device in a passage by which the flow of liquids or gases may be permitted or stopped.

Valve, Admission: The valve in the admission pipe of the engine leading from the carbureter to the cylinder by which the supply of fuel may be cut off.

Valve, Automatic: See "Automatic Valve".

Valve, Inlet: See "Inlet Valve".

Valve, Mixing: See "Mixing Valve".

Valve, Muffler Cut-Out: See "Cut-Out, Muffler".

Valve, Overhead: See "Overhead Valve".

Valve, Poppet: See "Poppet Valve".

Valve, Rotary: See "Motor, Rotary Valve".

Valve, Suction: An admission valve which is opened by the difference between the pressures in the atmosphere and in the cylinder.

Valve Cage: A valve-retaining pocket which is attached to the cylinder.

Valve Clearance: The clearance of play between the valve stem and the tappet.

Valve Gear: The mechanism by which the motion of the admission or exhaust valve is controlled.

Valve Grinding: The act of removing marks of corrosion, pitting, etc., from the seats and faces of poppet or disk valves. The surfaces to be ground are rotated in contact with each other, an abrasive having been supplied.

Valve Lift: See "Lift".

Valve Lifter: A device for raising a poppet valve from its seat.

Valve Seat: (1) That portion of the engine upon which the valve rests when it is closed. (2) The portion upon which the face of a valve is in contact when closed.

Valve Setting: The operation of adjusting the valves of an engine so that the events of the cycle occur at the proper time. Also called *valve timing*.

Valve Spring: The spring which is around the valve stem and is used to return the valve to closed position after it has been opened by the cam:

Valve Stem: The rod-like portion of a poppet valve.

Valve Timing: See "Valve Setting".

Vaporizer: A device to vaporize the fuel for an oil engine. In starting it is necessary to heat the vaporizer, but the exhaust gases afterwards keep it at the proper temperature. The carbureter of the gas engine properly belongs under the general head of *vaporizer*, but the term has become restricted to the vaporizer for oil engines.

Variable-Speed Device: See "Gear, Change-Speed".

Vertical Motor: An upright engine whose piston travel is in a vertical plane.

Vibrator: The part of the primary circuit of a jump-spark ignition system by which the circuit is rapidly interrupted to give a transformer effect in the coil.

Vibrator, Master: See "Master Vibrator".

Volatile: Passing easily from a liquid to a gaseous state, in opposition to *fixed*.

Volatilization: Evaporation of liquids upon exposure to the air at ordinary temperatures.

Volt: Practical unit of electromotive force, such an electromotive force as would cause a current of one ampere to flow through a resistance of one ohm.

Voltammeter: A voltmeter and an ammeter combined; sometimes refers to wattmeter.

Voltmeter: An instrument for measuring the difference of electric potential between the terminals of an electric circuit. It registers the electric pressure in volts.

Vulcanization: The operation of combining sulphur with rubber at a high temperature, either to make it soft, pliable, and elastic, or to harden it.

Vulcanizer: A furnace for the vulcanization of rubber.

W

Walking Beam: See "Rocker Arm".

Water Cooling: Method of removing the heat of an internal-combustion motor from the cylinders by means of a circulation of water between the cylinders and the outer casing.

Water Gage: An instrument used to indicate the height of water within a boiler or other water system. It consists of a glass tube connected at its upper and lower ends with the water system.

Water Jacket: A casing placed about the cylinder of an internal-combustion engine to permit a current of water to flow around it for cooling purposes.

Watt: The unit of electric power. It is the product of the current in amperes flowing in a circuit by the pressure in volts. It is $\frac{1}{746}$ of a horsepower.

Watt Hour: The unit of electrical energy. The given watt-hour capacity of a battery, for instance, means the ability of a battery to furnish one watt for the given number of hours or the given number of watts for one hour, or a number of watts for a number of hours such that their product will be the given watt hours.

Welding, Autogeneous: A method of joining two pieces of metal by melting by means of a

blow torch burning acetylene in an atmosphere of oxygen. This melts the ends of the parts and these are then run together.

Wheel, Artillery: A wood-spoked wheel whose spokes are in line with a line drawn vertically through the hub.

Wheel, Dished: A wheel made concave or convex so that the hub is inside or outside as compared with the rim. This is to counteract the outward inclination of the wheel due to the fact that the spindle is tapered and that its outward center is lower than its inner center.

Wheel, Double-Interacting: The mechanism by which two wheels are hung on one hub or axle, the outer being shod with an ordinary solid tire and the inner with a pneumatic tire, so that the weight of the vehicle bears against the lowest point of the pneumatic tire of the inner wheel to give the durability and tractive properties of a solid tire with the resiliency of a pneumatic.

Wheel, Spare: See "Spare Wheel".

Wheel Steering: See "Steering Wheel".

Wheel, Wire: A wheel with spokes made of wire.

Wheel Puller: A device used for pulling automobile wheels from their axles.

Wheel Steer: A method of guiding a car by means of a hand wheel.

Wheel, Steering Angle for: The angle which the steering column makes with the horizontal. It varies from 90° to 30° or less.

Wheelbase: The distance between the road contact of one rear wheel with the point of road contact of the front wheel on the same side.

Wheels, Driving on All Four: The method of using all four wheels of an automobile as the driving wheels.

Wheels, Driving on Front: The method of using the two front wheels as the drivers.

Wheels, Steering on Rear: Method of guiding the vehicle by turning the rear wheels.

Whistle: An automobile accessory consisting of a signalling apparatus giving a loud or harsh sound. Also called a *horn*.

Wind Guard: See "Wind Shield".

Wind Shield: A glass front placed upright on the dash to protect the occupants of the car from the wind.

Wipe Spark: Form of primary sparking device in which a spark is produced by a moving terminal sliding over another terminal, the break thus made causing a spark. Also called *touch spark*.

Wipe-Spark Coil: A primary spark coil with which the spark is made by wiping contact.

Wire Drawing: The effect of steam passing through a partially closed valve or other constricted opening; so called from the thinness of the indicator diagram.

Working Pressure: The safe working pressure of a boiler, usually estimated as ⅙ of the pressure at which a boiler will burst.

Worm: A helical screw thread.

Worm and Sector: A worm gear in which the worm wheel is not complete but is only a sector. Used especially in steering devices.

Worm Drive: A form of drive using worm gears. See "Gears, Worm".

Worm Gear: The spiral gear in which a worm or screw is used to rotate a wheel.

Worm Wheel: A wheel rotated by a worm.

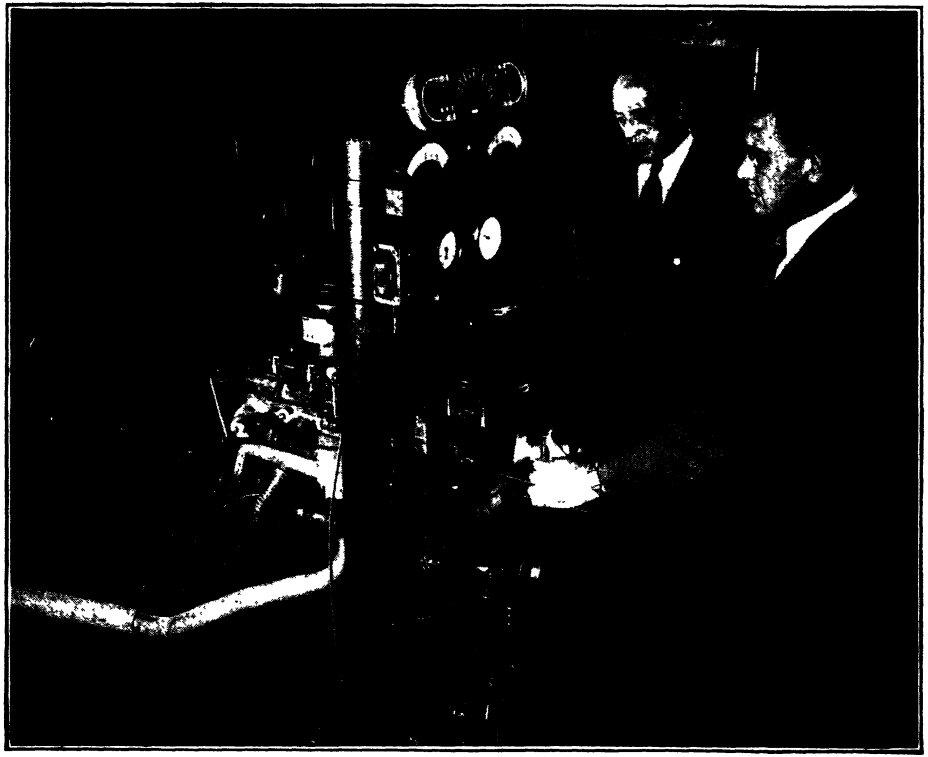
Wrist Pin: See "Piston Pin".

X

X Spring: A vehicle spring composed of two laminated springs so placed one upon the other that they form the letter X.

Y

Yoke, Steering: See "Steering Yoke".



LABORATORY SETUP FOR TESTING OLDSMOBILE ENGINES
Courtesy of the Olds Motor Works

GENERAL INDEX

In this Index the *Volume Number* appears in Roman numerals—thus, I, II, III, IV, etc., and the *Page Number* in Arabic numerals—thus, 1, 2, 3, 4, etc. For example, Volume IV, Page 327, is written, IV, 327.

D

Q

R

T